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ACCOUNT

OF

AN EXPEDITION

FROM

PITTSBURGH TO THE ROCKY MOUNTAINS,

PERFORMED IN THE YEARS 1819 AND '20,

BY ORDER OF

THE HON. J. C. CALHOUN, SEC'Y OF WAR:

UNDER THE COMMAND OF

MAJOR STEPHEN H. LONG.

FROM THE NOTES OF MAJOR LONG, MR. T. SAY, AND OTHER GENTLEMEN OF THE EXPLORING PARTY.

COMPILED

BY EDWIN JAMES,

BOTANIST AND GEOLOGIST FOR THE EXPEDITION.

IN TWO VOLS.—WITH AN ATLAS.

VOL. I.

PHILADELPHIA:

H. C. CAREY AND I. LEA, CHESNUT ST.

1823.

EASTERN DISTRICT OF PENNSYLVANIA, to wit:

BE IT REMEMBERED, that on the twenty-ninth day of November, in the forty-seventh year of the independence of the United States of America, A. D. 1822, H. C. CAREY and I. LEA of the said district, have deposited in this office the title of a book, the right whereof they claim as proprietors in the words following, to wit:

"Account of an Expedition from Pittsburgh to the Rocky Mountains, performed in the years 1819 and '20, by order of the Hon. J. C. Calhoun, Sec'ry of War, under the command of S. H. Long, Maj. Topl. Engrs. from the notes of Maj. Long, Mr. T. Say, and other gentlemen of the Exploring Party, compiled by Edwin James, botanist and geologist for the expedition. In two vols.—Vol. I."

In conformity to the act of the congress of the United States, intituled "An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned."—And also to the act, entitled, "An act supplementary to an act entitled, "An act for the encouragement of learning, by securing the copies of maps, charts and books, to the authors and proprietors of such copies during the times therein mentioned," and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

D. CALDWELL,
Clerk of the Eastern District of Pennsylvania.

TO THE

HONOURABLE J. C. CALHOUN,

SECRETARY OF WAR,

WHOSE LIBERAL VIEWS, ENLIGHTENED POLICY, AND

JUDICIOUS MEASURES,

WHILE THEY HAVE BEEN PROSECUTED WITH THE

UTMOST CIRCUMSPECTION AND ECONOMY,

HAVE AT THE SAME TIME CONTRIBUTED

IN AN EMINENT DEGREE

TO THE ADVANCEMENT OF THE

NATIONAL CHARACTER OF THE UNITED STATES

BOTH IN SCIENCE AND POLITICS,

THESE VOLUMES ARE MOST RESPECTFULLY DEDICATED

BY THE AUTHORS,

AS AN HUMBLE TESTIMONIAL

OF THEIR

HIGH SENSE OF HIS TALENTS AND PATRIOTISM,

AND AS A GRATEFUL ACKNOWLEDGMENT

OF HIS

INDULGENCE AND PATRONAGE.

CORRECTIONS.

Vol. I. page 4, line 13 from bottom, for [illegible] read *[illegible]*.
" " 9, " 2 from bottom, for Allegheny read *Monongahela*.
" " 24, last line of note, for [illegible] read *[illegible]*.
" " 29, line 7 from top, for Aberibon read *Abutilon*.
" " 30, last line of note, for those read *these*.
" " 33, line 27 from bottom, for bitumeinous read *bituminous*.
" " 36, line 9 from top, for considerable read *a considerable*.
" " 38, line 5 from top, insert *is*.
" " 42, line 11 from top, for more read *short*.
" " " line 2 from bottom, for review read *renew*.
" " 59, line 2 from top, for 1816 read 1819.
" " 69, line 6 from top, for fifth read *sixth*.
" " 72, line 1 from top, for retured read *returned*.
" " 102, line 17 from top, for Chinaj read *Chenal*. (*et passim*).
" " 108, heading of Chap. for Isle au Vache read *Fort Osage*.
" " 110, line 16 from bottom, for moore read *more*.
" " 115, line 1 of note for Macroura read *macrourus*.
" " 157, line 4 from top, for one read *end*.
" " 233, line 15 from bottom, for progressing read *progression*.
" " 300, line 5 from top, for conclusion read *concretions*.
" " 343, line 7 from top, erase [illegible].
" " 400, line 7 from top, for Alexandria read *Chesterfield*.
Vol. II. " 15, line 16 from bottom, for rarely read *slowly*.
" " 26, line 5 from bottom, for [illegible] read *[illegible]*.
" " 42, line 11 from top, for obstruct read *impede*.
" " 51, line 16 from top, after Galpodes insert a period.
" " 63, line 1 from top, for gigantes read *giganteus*.
" " 99, line 2 from top, for Schraalin read *Schrankia*.
" " 126, line 3 from bottom for circinate read *circinata*.
" " 151, line 8 from bottom, for Ozarks read *Osarks*.
" " 160, line 10 from bottom, for epidote chlorite read *epidote, chlorite*.
" " 186, line 13 from top, after Durdsand erase *Eye*.
" " 280, line 13 from top, for southwestern read *southeastern*.
" " 304, line 16 from top, for "Bayou de Bon Dieu" read "Rigollet de Bon Dieu."
" " 328 line 4 from bottom, for 10 read 5°.
" " " line 2 from bottom, for [illegible] read *[illegible]*.
" " 337 line 4 from bottom for like read *unlike*.
" " 376, line 11 from bottom, for IX read X.
" " 379, line 15 from top for X read XI.

PRELIMINARY NOTICE.

In selecting from a large mass of notes and journals the materials of the following volumes, our design has been to present a compendious account of the labors of the Exploring Party, and of such of their discoveries as were thought likely to gratify a liberal curiosity. It was not deemed necessary to preserve uniformity of style, at the expense of substituting the language of a compiler for that of an original observer. Important contributions of entire passages from Major Long and Mr. Say, will be recognized in various parts of the work, though we have not always been careful to indicate the place of their introduction. Those gentlemen have indeed been constantly attentive to the work, both to the preparation of the manuscript and its revision for the press.

In the following pages we hope to have contributed something towards a more thorough acquaintance with the Aborigines of our country. In other parts of our narrative where this interesting topic could not be introduced, we have turned our attention towards the phenomena of nature, to the varied and beautiful productions of animal and vegetable life, and to the more magnificent if less attractive features of the inorganic creation.

If in this attempt we have failed to produce any thing to amuse or instruct, the deficiency is in ourselves. The few minute descriptions of animals and plants that were thought admissible, have been placed as marginal notes, and we hope they will not be the less acceptable to the scientific reader, for being given in the order in which they occurred to our notice.

Descriptions of the greater number of the animals and plants collected on the Expedition, remain to be given. These may be expected to appear from time to time, either in periodical journals or in some other form.

Not aspiring to be considered historians of the regions we traversed, we only aimed at giving a sketch true at the moment of our visit, and which, as far as it embraces the permanent features of nature, will we trust, be corroborated by those who shall follow our steps. Much remains to be done not only on the ground we have occupied, but in those vast regions in the interior of our continent, to which the foot of civilized man has never penetrated. We cannot but hope, that the enlightened spirit which has already evinced itself in directing a part of the energies of the nation, towards the development of the physical resources of our country, will be allowed still farther to operate; that the time will arrive, when we shall no longer be indebted to the men of foreign countries, for a knowledge of any of the products of our own soil, or for our opinions in science.

We feel it a duty incumbent upon us, to acknowledge our obligations to many distinguished individuals both military and scientific, and particularly to several members of the Philosophical Society of Philadelphia, for their prompt offers of any aid in their power to contribute towards advancing the objects of the expedition at its commencement. We are indebted more especially to Professors James, Walsh, and Patterson, to Dr. Dewees and Mr. Duponceau; each of whom furnished a number of queries, and a list of objects, by which to direct our observations. These we found eminently useful, and we regret to state that, with many of our manuscripts they were inadvertently mislaid, otherwise, they should have been published in this place, for the information of future travellers.

An interesting communication from Messrs. Gordon and Wells, of Smithland, Kentucky, was received after the first volume had gone to press, consequently too late for insertion.

As a farther introduction to our narrative, we subjoin an extract from the orders of the Honourable Secretary of War to Major Long, exhibiting an outline of the plan and objects of the Expedition.

"You will assume the command of the Expedition to explore the country between the Mississippi and the Rocky Mountains."

"You will first explore the Missouri and its principal branches, and then, in succession, Red river, Arkansa and Mississippi, above the mouth of the Missouri."

"The object of the Expedition, is to acquire as thorough and accurate knowledge as may be practicable, of a portion of our country, which is daily becoming more interesting, but which is as yet imperfectly known. With this view, you will permit nothing worthy of notice, to escape your attention. You will ascertain the latitude and longitude of remarkable points with all possible precision. You will if practicable, ascertain some point in the 49th parallel of latitude, which separates our possessions from those of Great Britain. A knowledge of the extent of our limits will tend to prevent collision between our traders and theirs."

"You will enter in your journal, every thing interesting in relation to soil, face of the country, water courses and productions, whether animal, vegetable, or mineral."

"You will conciliate the Indians by kindness and presents, and will ascertain, as far as practicable, the number and character of the various tribes, with the extent of country claimed by each."

"Great confidence is reposed in the acquirements and zeal of the citizens who will accompany the Expedition for scientific purposes, and a confident hope is entertained, that their duties will be performed in such a manner, as to add both to their own reputation and that of our country."

"The Instructions of Mr. Jefferson to Capt. Lewis, which are printed in his travels, will afford you many valuable suggestions, of which as far as applicable, you will avail yourself."

It will be perceived that the travels and researches of the Expedition, have been far less extensive than those contemplated in the foregoing orders:—the state of the national finances, during the year 1821, having called for retrenchments in all expenditures of a public nature,—the means necessary for the farther prosecution of the objects of the Expedition, were accordingly withheld.

[illegible] Great Britain. A knowledge of the extent of our limits will tend to prevent collision between our traders and theirs."

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EXPEDITION

FROM

PITTSBURGH TO THE ROCKY MOUNTAINS.

CHAPTER I.

Departure from Pittsburgh—North-Western slope of the Alleghany mountains—Rapids of the Ohio.

EARLY in April, 1819, the several persons constituting the exploring party had assembled at Pittsburgh. It had been our intention to commence the descent of the Ohio, before the middle of that month; but some unavoidable delays in the completion of the steam boat, and in the preparations necessary for a long voyage, prevented our departure until the first of May. On the 31st March the following instructions were issued by the commanding officer, giving an outline of the services to be performed by the party, and assigning to each individual the appropriate duties.

"Pursuant to orders from the Hon. Secretary of War, Major Long assumes the command of the expedition about to engage in exploring the Mississippi, Missouri, and their navigable tributaries, on board the United States steam boat Western Engineer.

"The commanding officer will direct the movements and operations of the expedition, both in relation to military and scientific pursuits. A strict observance of all orders, whether written or verbal, emanating from him will be required of all connected with the expedition. The prime object of the expedition being a topographical description of the country to be explored, the commanding officer will avail himself of any assistance he may require of any persons on board to aid in taking the necessary observations. In this branch of duty Lieutenant Graham and Cadet Swift will officiate as his immediate assistants.

“The journal of the expedition will be kept by Major Biddle, whose duty it will be to record all transactions of the party that concern the objects of the expedition, to describe the manners and customs, &c. of the inhabitants of the country through which we may pass; to trace in a compendious manner the history of the towns, villages, and tribes of Indians we may visit; to review the writings of other travellers, and compare their statements with our own observations; and in general to record whatever may be of interest to the community in a civil point of view, not interfering with the records to be kept by the naturalists attached to the expedition.

“Dr. Baldwin will act as Botanist for the expedition. A description of all the products of vegetation, common or peculiar to the countries we may traverse, will be required of him, also the diseases prevailing among the inhabitants, whether civilized or savages, and their probable causes, will be subjects for his investigation; any variety in the anatomy of the human frame, or any other phenomena observable in our species, will be particularly noted by him. Dr. Baldwin will also officiate as physician and surgeon for the expedition.

Mr. Say will examine and describe any objects in Zoology and its several branches, that may come under our observation. A classification of all land and water animals, insects, &c. and a particular description of the animal remains found in a concrete state will be required of him.

“Geology, so far as it relates to earths, minerals and fossils, distinguishing the primitive, transition, secondary, and alluvial formations and deposits, will afford subjects of investigation for Mr. Jessup. In this science, as also in Botany and Zoology, facts will be required without regard to the theories or hypotheses that have been advanced on numerous occasions by men of science.

"Mr. Peale will officiate as assistant naturalist. In the several departments above enumerated his services will be required in collecting specimens suitable to be preserved, in drafting and delineating them, in preserving the skins, &c. of animals, and in sketching the stratifications of rocks, earths, &c. as presented on the declivities of precipices.

"Mr. Seymour, as painter for the expedition, will furnish sketches of landscapes, whenever we meet with any distinguished for their beauty and grandeur. He will also paint miniature likenesses, or portraits if required, of distinguished Indians, and exhibit groups of savages engaged in celebrating their festivals, or sitting in council, and in general illustrate any subject, that may be deemed appropriate in his art.

"Lieutenant Graham and Cadet Swift, in addition to the duties they may perform in the capacity of assistant Topographers, will attend to drilling the boat's crew, in the exercise of the musket, the field piece, and the sabre.

"Their duties will be assigned them, from time to time, by the commanding officer.

"All records kept on board the steam boat, all subjects of Natural History, Geology, and Botany, all drawings, as also journals of every kind relating to the expedition will at all times be subject to the inspection of the commanding officer, and at the conclusion of each trip or voyage, will be placed at his disposal, as agent for the United States' government.

"Orders will be given, from time to time, whenever the commanding officer may deem them expedient.

S. H. Long, *Major U. S. Engineers,*
Commanding Expedition."

On the third of May we left the arsenal, where the boat had been built, and after exchanging a salute of twenty-two guns, began to descend the Alleghany, towards Pittsburgh. Great numbers of spectators lined the banks of the river, and their acclamations were occasionally noticed by the discharge of ordnance on board the boat. The important duties assigned the expedition rendered its departure a subject of interest, and some peculiarities in the structure of the boat attracted attention.

We were furnished with an adequate supply of arms and ammunition, and a collection of books and instruments.

On Wednesday the 5th of May, having completed some alterations, which it appeared necessary to make in our engine, and received on board all our stores, we left Pittsburgh and proceeded on our voyage. All the gentlemen of the party except Dr. Baldwin were in good health, and entered upon this enterprise in good spirits and with high expectations. Fourteen miles below Pittsburgh we passed a steam boat lying aground; we received and returned their salute, as is customary with the merchants' boats on the Ohio and Mississippi.

At evening we heard the cry of the whip-poor-will,* and among other birds saw the pelicanus carbo, several turkey vultures, and the tell-tale sandpiper. The spring was now rapidly advancing, the dense forests of the Ohio bottoms were unfolding their luxuriant foliage, and the scattered plantations assuming the cheering aspect of Summer.

A few weeks residence at and near Pittsburgh, and several journies across the Alleghany mountains, in different parts, have afforded us the opportunity of collecting a few observations relative to that important section of country, which contains the sources of the Ohio.

In the Alleghany river we found several of those little animals, which have been described as a species of Proteus, but which to us appear more properly to belong to the genus Triton.*

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*Caprimulgus vociferus.

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* Triton *lateralis*. Say.

Body and extremity above brown, with irregular black spots; *tail* much compressed, subacutely edged above and beneath, lanceolate; a black vitta from the nostrils passes through the eye, and is dilated on the sides and becomes obsolete on the tail; a vertebral indented line, from the neck to the origin of the caudal carina, more faintly indented on the head; *head* somewhat rectilinearly attenuated from the anterior branchiæ, to the vicinity of the nostril, and truncate or subemarginate before; *nostrils* minute; *eyes* very small, whitish, crossed with the lateral line of the head; *beneath* pale flesh colour; chin and jaws to the branchiæ, and *tail* from the posterior feet, with the exception of the areola of the vent, coloured like the back; *mouth* moderate, angles beneath the eyes; *lips* covering the jaws loosely, inferior lip with a duplicature each side, which is white and covered by the superior lip; *tongue* free, fleshy, rounded, extending beyond the angles of the mouth; *teeth*, lower jaw in a single row, obtusely conic, small, rather distant; a few smaller ones near the angle, elevated on a slightly prominent portion of the jaw; *superior jaw* with a double series of teeth similar to the others, but rather smaller, an external depression corresponding with the elevation in the lower jaw, and a few elevated teeth near the angle; *throat* with a duplicated cuticle; branchiæ permanent. Legs short, weak, four toed.

Total length 10 inches; from the tip of the nose to the vent, 6 1-2 inches.

We caught this animal with the hook and line in the neighbourhood of Pittsburgh, but it is by no means so common there as the Salamandra Alleghaniensis of Michaux, or young alligator.

The colour above is in reality pale, but it is rendered of a brownish appearance by the very numerous confluent points of that colour, which nearly cover the surface of the body; branchiæ bright red; peduncles colour of the body. Daudin informs us, that Schneider, in his history of Amphibia, describes an animal very similar to this, found in Lake Champlain, and which Daudin supposes to be the larva of *Triton Alleghaniensis;* Daudin however, is of the opinion, that the hind feet were mutilated, from the circumstance of their having only four toes.

The late Professor B. S. Barton had heard of this animal, and from the account he received, was led to regard it as a Siren.

Finally, Dr. Mitchell has unequivocally described the animal, in the 4th Vol. of Silliman's Journal, as a Proteus.

Not supposing the *lateralis* to belong, strictly speaking, to either of these genera, and with a view to ascertain its real nature, we obtained permission from the Academy of Natural Science, to open a specimen belonging to their cabinet, and which was brought from the Ohio by Mr. J. Speakman. The result corresponded with our most confident expectations, showing that the number of its vertebræ is greatly inferior to that of the Proteus, and corresponding with that of the Tritons; and that the pseudo-ribs were in an entire series, somewhat superior in proportional length and perfection of form to those of the Proteus, and resembling those of the Triton. It has therefore, a far more close alliance with the genus Triton, than with any other yet established.

Several animals have been described, to which it is more closely relat-

The northwestern slope of that range of mountains, known collectively as the Alleghanies, has a moderate inclination towards the bed of the Ohio, and the St. Lawrence, which run nearly in opposite directions, along its base. This moun-

ed by the character of the persistent branchiæ, then it is to the well known types of the genus, of which the branchiæ disappear at the age of puberty. Of such animals the following may be instanced.

The *Axolotl* of Mexico. Siren pisciformis of Shaw. Gen. Zool.

The Tetradactyle of Lacepede in the Ann. du. Mus. Vol. 10.

The *Siren Operculata* of Beauvois in Philos. Trans. of Phila. Vol. 4.

And possibly also, the *Proteus Neocæsariensis* of Professor Green— Jour. A. N. S. Vol. 1.

These four or five species might with propriety be separated from the genus to which they are referable in the present state of the system, and placed in a separate genus, the external characters of which will be the same as those of Triton, with the exception of the persistent branchiæ. Its proper station will therefore be intermediate between Triton and Proteus, but far more closely related to the former.

It may be proper to mention in this place, that the generic name Triton, was applied by Laurenti to the Newts, long before Montfort made use of it in Conchology, to designate the war conch of the ancient Romans, and of the present inhabitants of Madison's island.

We are indebted to Dr. Richard Harlan, for the following anatomical observations, on this singular animal.

Alveolar margins of the maxillæ denticled, the spiculæ pointing backwards towards the œsophagus. The œsophagus very large, like that of the serpents, gradually expanding as it descends to form the stomach, which again contracts at the commencement of the intestinal tube; the lining membrane of the œsophagus and stomach, thrown into longitudinal folds which were continued throughout the intestines; which tube undergoes several enlargements in its course, giving it a sacculated appearance similar to the alimentary canal of the alligator; in the animal under consideration, they form several convolutions previous to their termination into the cloaca; the stomach contained an earth worm. The mesentery transparent, displaying a number of very large lacteals which in the present instance, were filled with coagulated chyle. Length of the intestines 10 inches. The ovary is of considerable size, of an oblong figure, lying close to the vertebræ, and opening by a straight duct into the posterior part of the cloaca. *Liver* very large, and apparently (but not certainly) discharged its contents into the stomach. *Lungs*, consist of two long membranous bags, which run the whole length of the abdomen, anteriorly to the stomach and intestines; the opening of the larynx scarcely large enough to admit a pin's head; the lungs resemble two long air bags, more than a true pulmonary apparatus; the cartilaginous laminæ of the branchiæ, three in number, attached superiorly to the integuments over the cervical vertebræ, converging together beneath or anteriorly, and are attached to a cartilage answering to the os hyoides; the heart, which was extremely small, consisted apparently of one auricle, and one ventricle, the aorta soon bifurcated, sending one branch to each pulmonary apparatus to be ultimately ramified upon the branchiæ, resembling so far the circulation of fishes, and tain chain extends uninterrupted along the Atlantic coast, from the Gulf of St. Lawrence southwest to the great alluvial formation of the Mississippi. It crosses the St. Lawrence at the rapids above Quebec, and has been supposed to be connected as a spur to a group of primitive mountains occupying a large portion of the interior of the continent, north of the great Lakes.* An inspection of any of the late maps of North America, will show that this range holds the second place among the mountain chains of this continent. All our rivers of the first magnitude have their sources, either in the Rocky Mountains, or in elevated spurs, projecting from the sides of that range. The largest of the rivers, flowing from the Alleghanies, is the Ohio; and even this, running almost parallel to the range, and receiving as many, and, with a few exceptions, as large rivers from the north as from the

differing from the amphibia, in which there is either a double or mixed circulation.

Olfactory apparatus similar to that of fishes, viz: a small aperture near the extremity of the snout, leads into a cavity or *cul de sac*, lined by a delicate membrane, plentifully supplied by the *fibrillæ* of two slender olfactory nerves, which go off from the anterior end of each lobe of the cerebrum. The brain is of an oblong figure, the cerebrum is formed of two lobes, the cerebellum of one lobe situate directly posterior, not much thicker than the medulla oblongata. The optic nerves, which were large in proportion to the organs of vision, took their origin in a very unusual manner. On either side of the medulla oblongata, is given off a large nerve which proceeds forwards and outwards, and soon after it passes outside of the cavity of the cranium, it divides into two branches, the smaller goes to the eye, the larger is distributed to the superior maxilla. The eye itself is small, and the lens which was coagulated by the spirits, is about half the size of a pin's head, and of the texture of the lens of a fish when boiled.

The number of vertebræ from the atlas to the last lumbar, is exactly nineteen, to the transverse processes of all of them, (after the two first is attached by a moveable articulation,) a small slender spicula of bone, or rib like process, about one-eighth of an inch in length, which at the same time, they give origin to the large muscles that move the body, offer no obstruction to the lateral curvatures of the animal when in motion, but as to appearance or function, are not to be considered as ribs. The number of vertebræ from the first sacral to the last caudal, is from twenty to thirty-five; they become exceedingly small towards the end of the tail; on the back part of the oesophagus, exterior to the cavity of the cranium, is found on each side, a calcarious concretion, similar to that in the head of the shark.

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* Maclure.

south, seems in a great measure independent of it. From the most elevated part of the continent, at the sources of the Platte, and Yellow Stone branches of the *Missouri*, the descent towards the Atlantic, is at least twice obstructed by ranges of hills nearly parallel, in direction, to each other. Erroneous impressions have heretofore prevailed, respecting the character of that part of the country called the Mississippi Valley. If we consider attentively that extensive portion of our continent, drained by the Mississippi, we shall find it naturally divided into two nearly equal sections. This division is made by a range of hilly country, to be hereafter particularly described, running from near the north-western angle of the Gulf of Mexico north-eastwardly to Lake Superior. Eastward, from this range, to the summit of the Alleghanies, extends a country of forests, having usually a deep and fertile soil, reposing upon extensive strata of argillaceous sandstone, compact limestone, and other secondary rocks. Though these rocks extend almost to the highest summits of the Alleghanies, and retain even there the horizontal position which they have in the plains, the region they underlay, is not to be considered as forming a district of table lands. On the contrary, its surface is varied by deep vallies, and lofty hills; and there are extensive tracts elevated probably not less than eight hundred feet above the Atlantic ocean. The north-western slope of the Alleghany mountains, though more gradual than the south-eastern, is, like it, divided by deep vallies, parallel to the general direction of the range. In these vallies, many of the rivers, which derive their sources from the interior and most elevated hills of the group, pursue their courses for many miles, descending either towards the south-west, or the north-east, until they at length acquire sufficient force to break through the opposing ridges, whence they afterward pursue a more direct course. As instances, we may mention the Alleghany river, which runs nearly parallel, but in an opposite direction, to the Ohio—the great Kenhawa, whose course above the falls forms an acute angle with the part below—also the Cumberland, and Tennessee, which run a long distance parallel to each other, and to the Ohio. This fact seems to justify the inference, that some other agent than the rivers has been active in the production of the vallies between the subordinate ridges of the Alleghany. There appears some reason to believe that the rocky hills, along the immediate course of the Ohio, and the larger western rivers, have received, at least their present form, from the operation of streams of water. They do not, like the accessary ridges of the Alleghany, form high and continuous chains, apparently influencing the direction of rivers, but present groups of conic eminences separated by water-worn vallies, and having a sort of symmetric arrangement. The structure of these hills, does not so much differ from that of the Alleghany mountains, as their form and position. The long chains of hills, which form the ascent to the Alleghany, on the western side, are based either on metalliferous limestone, or some of the inclined rocks belonging to the transition formation of Werner, and have their summits capped with the more recent secondary aggregates in strata without inclination, and greatly resembling those found in the plains west of the Ohio. It is not easy to conceive how these horizontal strata, unless originally continuous, should appear so similar at equal elevations in different hills, and hills separated by vallies of several miles in width. If that convulsion which produced the inclination of the strata, of the metalliferous limestone, the clay slate, and the gray wacke, happened before the deposition of the compact limestone, and the argillaceous sandstones, why are not these later aggregates found principally in the vallies where their integrant particles would be supposed most readily to have accumulated? On the other hand, if the secondary rocks had been deposited previous to that supposed change, how have their stratifications retained the original horizontal position, while that of the transition strata has been changed?

Most of the rivers which descend from the western side of the Alleghany mountains, are of inconsiderable magnitude, and by no means remarkable on account of the straightness of their course, or the rapidity of their currents. The maps accompanying this work, will, in the most satisfactory manner, illustrate the great contrast in this respect, between the district now under consideration and the eastern slope of the Rocky mountains. The Tennessee, the Cumberland, the Kentucky, the Kenhawa and Alleghany rivers, though traversed in their courses by rocky dikes, sometimes compressing their beds into a narrow compass, occasioning rapids, and in other instances causing perpendicular falls, yet compared to the Platte, and the western tributaries of the Missouri generally, can be considered neither shoal nor rapid. Their immediate banks are permanent, often rocky, and the sloping beach covered with trees or shrubs, and the water, except in time of high floods, nearly transparent. The waters of the Ohio, and its tributaries, and perhaps of most other rivers, when they do not suspend such quantities of earthy matter as to destroy their transparency, reflect, from beneath their surface, a greenish colour. This colour has been thought to be, in some instances, occasioned by minute confervas, or other floating plants, or to result from the decomposition of decaying vegetable matter. That it depends on neither of these causes, however, is sufficiently manifest, for when seen by transmitted light, the green waters are usually transparent and colourless. Some rivers of Switzerland, and some of South America which descend from lofty primitive mountains, consisting of rocks of the most flinty and indestructible composition, covered with perpetual snows, and almost destitute of organic beings, or exuviæ either animal or vegetable, and whose waters have a temperature, even in summer, raised but a few degrees above the freezing point, which circumstance, together with the rapidity of their currents, render them unfit for the abode of vegetable life, and is incompatible with the existence of putrefaction, notwithstanding the transparency of their waters, and the reddish, or yellowish colour of the rocks which pave their beds, have a tinge of green, like the Ohio and Cumberland, at times of low water. It is well known that the water of the ocean, though more transparent than any other, is usually green near the shores; and on soundings, while at main ocean, its colour is blue. Perhaps the power which transparent waters have of decomposing the solar light, and reflecting principally the green rays, may have some dependence upon the depth of the stratum. If this were the case, we might expect all rivers, equally transparent and of equal depth, to reflect similar colours, which is not always the case.

In the southern part of Pennsylvania, the range called particularly the Alleghany ridge, is near the centre, and is most elevated of the group. Its summit divides the waters of the Susquehannah, on the east, from those of the Ohio on the west.

This mountain consists principally of argillite and the several varieties of gray wacke, gray wacke slate, and the other aggregates, which in transition formations usually intervene between the metalliferous limestone and the inclined sandstone. The strata have less inclination than in the Cove, Sideling, and South mountains, and other ridges east of the Alleghany. The summit is broad, and covered with heavy forests. Something of the fertility of the Mississippi valley seems to extend, in this direction, to the utmost limits of the secondary formation. The western descent of the Alleghany ridge is more gradual than the eastern, and the inclination of the strata, in some measure, reversed. It is proper to remark, that, throughout this group of mountains, much irregularity prevails in the direction as well as of the dip and inclination of strata. If any remark is generally applicable, it is, perhaps, that the inclination of the rocks is towards the most elevated summits in the vicinity.

Laurel ridge, the next in succession, is separated from the Alleghany by a wide valley. Its geological features are, in general, similar to those of the eastern ranges; but about its summit the sandstones of the coal formation, begin to appear alternating with narrow beds of bituminous clay slate. Near the summit of this ridge, coal-beds have been explored, and, at the time of our visit, coals were sold at the pits, for ten cents per bushel. In actual elevation, the coal strata, at the summit of Laurel-hill, fall but little below the summits of the Alleghany. Thus in traversing from east to west, the state of Pennsylvania, there is a constant but gradual ascent from the gneiss at Philadelphia, the several rocky strata occurring one above another, in the inverse order of their respective ages, the points most elevated being occupied by rocks of recent origin, abounding in the remains of animal and vegetable life.

Near the summit of this ridge some change is observed in the aspect of the forest. The deep umbrageous hue of the hemlock spruce, the Weymouth pine, and other trees of the family of the coniferæ is exchanged for the livelier verdure of the broad leaved laurel, the rhododendron, and the magnolia acuminata.

Chesnut ridge, the last of those accessary to the Alleghany on the west, deserving the name of a mountain, is somewhat more abrupt and precipitous, than those before mentioned. This ridge is divided transversely by the bed of the Loyalhanna, a rapid but beautiful stream, along which the turnpike is built. Few spots in the wild and mountainous regions of the Alleghanies, have a more grand and majestic scenery, than this chasm. The sides and summits of the two overhanging mountains, were at the time of our journey brown, and to appearance almost naked; the few trees which inhabit them, being deciduous, while the laurels and rose bays, gave the deep and narrow vallies the luxuriant verdure of spring.

The Monongahela rises in Virginia, in the Laurel ridge, and running northward receives in Pennsylvania the Yohogany, whose sources are in the Alleghany mountain, opposite those of the Potomac. This river, like most of those descending westward from the Alleghany, has falls and rapids at the points, where it intersects Laurel-hill, and some of the smaller ranges. Along the fertile bottoms of the Alleghany river, we begin to discover traces of those ancient works so common in the lower parts of the Mississippi valley, the only remaining vestiges of a people once numerous and powerful, of whom time has destroyed every other record. These colossal monuments, whatever may have been the design of their erection, have long since out-lived the memory of those who raised them, and will remain for ages, affecting witnesses of the instability of national, as well as individual greatness; and of the futility of those efforts, by which man endeavors to attach his name and his memorial to the most permanent and indestructible forms of inorganic matter.

In the deep vallies west of the Alleghany, and even west of the Laurel-ridge, the metalliferous limestone, which appears to be the substratum of this whole group of mountains, is again laid bare. In this part of the range, we have not observed those frequent alternations of clay-slate with this limestone, which have been noticed by Mr. Eaton and others in New England.* In its inclination, and in most particulars of external character, it is remarkably similar to the mountain limestone of Vermont, and the western counties of Massachusetts. Many portions of the interior of the state of Pennsylvania, have a basis of this limestone. When not overlaid by clay-slate, and particularly when not in connexion with sandstone, the soils resting on the transition limestone, are found peculiarly fertile and valuable, having usually a favorable disposition of surface for agricultural purposes, and abounding with excellent water.

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* Geological Survey of Rensselaer county. P. 11.

The transition limestone is not, however, of frequent occurrence westward of the Alleghany ridge. It appears only in the vallies, and is succeeded by clay-slate and the old sandstone lying almost horizontally. The coal, with the accompanying strata of argillaceous sandstone and shale, are, as far as we have seen, entirely horizontal.

The country westward from the base of the Chesnut-ridge, has an undulating surface. The hills are broad and terminated by a rounded out-line, and the landscape presenting a grateful variety of fields and forests is often beautiful, particularly when, from some elevation, the view overlooks a great extent of country, and the blue summits of the distant mountains, are added to the perspective.

Pittsburgh has been so often described, the advantages and disadvantages of its situation, and the gloomy repulsiveness of its appearance, have been so often and so justly portrayed, that we should not think ourselves well employed in recounting our own observations. The Alleghany and the Monongahela at Pittsburgh, where they unite to form the Ohio, are nearly equal in magnitude; the former, however, on account of the rapidity of its current, and the transparency of its waters, is a far more beautiful river than the latter. Its sources are distributed along the margin of Lake Erie, and a portage, of only fifteen miles, connects its navigation with that of the St. Lawrence.

About the sources of the Alleghany are extensive forests of pine, whence are drawn great supplies of lumber, for the country below as far as New Orleans. On French Creek and other tributary streams, are large bodies of low and rather fertile lands, closely covered with forests, where the great Weymouth pine, and the hemlock spruce are intermixed with beech, birch, and the sugar maple. The great white or Wemouth pine, is one of the most beautiful of the North American species. Its trunk often attains the diameter of five or six feet, rising smooth and straight from sixty to eighty feet, and terminated by a dense conical top. This tree, though not exclusively confined to the northern parts of our continent, attains there its greatest magnitude and perfection. It forms a striking feature in the forest scenery of Vermont, New Hampshire, and some parts of Canada, and New York; rising by nearly half its elevation above the summits of the other trees, and resembling, like the palms of the tropics, so beautifully described by M. De Saint Pierre, and M. De Humboldt, "a forest planted upon another forest."* The sighing of the wind in the tops of these trees, resembles the scarce audible murmurings of a distant water-fall, and adds greatly to the impression of solemnity produced by the gloom and silence of the pine forest. In the southern parts of the Alleghany mountains, pines are less frequent, and in the central portions of the valley of the Mississippi, they are extremely rare.

The Coal formation containing the beds, which have long been wrought near Pittsburgh, appears to be of great extent; but we are unable particularly, to point out its limits towards the north and east. One hundred miles above Pittsburgh, near the Alleghany river, is a spring, on the surface of whose waters, are found such quantities of a bituminous oil, that a person may gather several gallons in a day. This spring is most probably connected with coal strata, as are numerous similar ones in Ohio, Kentucky, &c. Indeed it appears reasonable to believe that the coal strata are continued along the western slope of the Alleghanies with little interruption, at least as far northward as the Brine springs of Onondago. Of all the saline springs belonging to this formation, and whose waters are used for the manufacture of salt, the most important are those of the Kenhawa, a river of Virginia. Others occur in that country of ancient monuments, about Paint-creek, between the Sciota and the Muskinghum, near the Silver-Creek hills in Illinois; and indeed in almost all the country contiguous to the Ohio river. Wherever we have had the opportunity of observing these brine springs, we have usually found them in connexion with an argillaceous sandstone, bearing impressions of phytolytes, calmaria, and those tessellated zoophytes, so common about many coal-beds. It appeared to us worthy of remark, that in many places, where explorations have been made for salt water, and where perpendicular shafts have been carried to the depth of from two to four hundred feet, the water, when found, rises with sufficient force to elevate itself several feet above the surface of the earth. This effect appears to be produced by the pressure of an ærial fluid, existing in connexion with the water, in those cavities beneath the strata of sandstone, where the latter is confined, or escaping from combination with it, as soon as the requisite enlargement is given, by perforating the superincumbent strata. We have had no opportunity of examining attentively, the gaseous substances which escape from the brine pits, but from their sensible properties, we are induced to suppose that carbonic acid, and carburetted hydrogen, are among those of most frequent occurrence.

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* See Humboldt's Personal Narrative, page 46, vol. v. Also St. Pierre's Paul and Virginia.

The little village of Olean, on the Alleghany river, has been for many years a point of embarkation, where great numbers of families, migrating from the northern and eastern states, have exchanged their various methods, of slow and laborious progression by land, for the more convenient one of the navigation of the Ohio. From Olean downward, the Alleghany and Ohio bear along with their currents fleets of rude arks laden with cattle, horses, household furniture, agricultural implements, and numerous families having all their possessions embarked on the same bottom, and floating onward toward that imaginary region of happiness and contentment, which like the "town of the brave and generous spirits," the expected heaven of the aboriginal American, lies always "beyond the place where the sun goes down."

This method of transportation, though sometimes speedy and convenient, is attended with uncertainty and danger. A moderate wind blowing up the river, produces such swells in some parts of the Ohio, as to endanger the safety of the ark; and these heavy unmanageable vessels are with difficulty so guided in their descent, as to avoid the *planters*, sunken logs, and other concealed obstructions to the navigation of the Ohio. We have known many instances of boats of this kind so suddenly sunk, as only to afford time for the escape of the persons on board.

On the 6th we arrived at Wheeling, a small town of Virginia, situate on a narrow margin along the bank of the Ohio, at the base of a high cliff of sandstone. Here the great national road from Cumberland, comes in conjunction with that of Zanesville, Columbus, and Cincinnati. The town of Cumberland, from which this great national work has received the appellation of the Cumberland road, lies on the north side of the Potomac, one hundred and forty miles E. by S. from Wheeling. The road between these two points, was constructed by the government of the United States, at a cost of one million eight hundred thousand dollars. The bridges and other works of masonry, on the western portion of this road, are built of a compact argillaceous sandstone, of a light gray or yellowish white colour, less durable than the stone used in the middle and eastern sections, which is the blue metalliferous limestone, one of the most beautiful and imperishable among the materials for building which our country affords. A few miles from Wheeling, a small but beautiful bridge, forming a part of this road, is ornamented with a statue of that distinguished statesman Mr. Clay—erected, as we were informed, by a gentleman, who resides in that neighbourhood.

In an excursion on shore, near the little village of Charleston in Virginia, we met with many plants common to the eastern side of the Alleghanies; beside the delicate sison bulbosum, whose fruit was now nearly ripened. In shady situations we found the rocks, and even the trunks of trees to some little distance from the ground, closely covered with the sedum ternatum, with white flowers fully unfolded. The cercis canadensis, and the cornus florida, were now expanding their flowers, and in some places occurred so frequently, as to impart their lively colouring to the landscape. In their walks on shore, the gentlemen of the party, collected great numbers of the early flowering herbaceous plants, common to various parts of the United States. An enumeration of a few of the species most commonly known, with the dates of their flowering, is subjoined.*

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* *April* 2d. Dentaria laciniata. Lamium amplexicaule. Draba verna. Poa annua. Alsine media. Houstonia cerulea. Saxifraga virginiensis.

4th. Anemone hepatica, *Hepatica triloba of Pursh. Flowers varying* from blue to white. Alnus serrulata. Carpinus Americanus. Satyrium repens, root perennial.

9th. Collected in flower from the south-west side *of* the Ohio, Sanguinaria canadensis. Hydrocotile bipinnata; root small and round, with small tubers attached to the fibre-like radicles, flowers white. Poa brevifolia.

13th. Glechoma hederacea; this plant covers not only the low grounds, but the wildest hills, particularly in northern exposures. Is it native?

24th. Polemonium Virginica, this is a predominant plant on the islands, as well as along the shores of the Alleghany on both sides. Epigæa repens. Phlox divaricata.

25th. Corydalis cucullaria. Trillium erectum, flowers varying from dark purple to white. Anemone thalictroides. Carex oligocarpa. Gnaphalium plantagineum. Potentilla sarmentosa. Claytonia virginica. Acer saccharinum, and A. dasycarpum, still flowering. Also the Celtis occidentalis. Ulmus Americana, and Planera aquatica, past.

27th. Veronica peregrina, and Ranunculus sceleratus; both common in the wildest situations and apparently native.

28th. Stellaria pubera. Turritis lævigata. Arabis lyrata. Viola pubescens. Ranunculus hirsutus. Thalictrum dioicum. Cercis canadensis. Cerastium vulgatum.

30th. Dentaria diphylla. Trillium sessile. Mitella diphylla. Delphinium tricorne. Arabis thaliana. Caulophyllum thalictroides.

May 1st. Carpinus Americanus. Vicia cracca. Ranunculus abortivus. Saxifraga Pennsylvanica. Uvularia grandiflora. *Ph.*

2d. Geranium maculatum. *Apple tree flowering.* Veronica officinalis.

Dr. Baldwin's Diary.

The scenery of the banks of the Ohio, for two or three hundred miles below Pittsburgh is eminently beautiful, but is deficient in grandeur and variety. The hills usually approach on both sides, nearly to the brink of the river; they have a rounded and graceful form, and are so grouped as to produce a pleasing effect. Broad and gentle swells of two or three hundred feet, covered with the verdure of the almost unbroken forest, embosom a calm and majestic river, from whose unruffled surface, the broad out line of the hills is reflected with a distinctness, equal to that with which it is imprinted upon the azure vault of the sky. In a few instances near the summits of the hills, the forest trees become so scattered, as to disclose here and there a rude mass, or a perpendicular precipice of grey sandstone, or compact limestone, the prevailing rocks in all this region. The hills are however usually covered with soil on all sides, except that looking towards the river, and in most instances are susceptible of cultivation to their summits. These hilly lands are found capable of yielding, by ordinary methods of culture, about fifty bushels of maize per acre. They were originally covered with dense and uninterrupted forests, in which the beech trees were those of most frequent occurrence. These forests are now disappearing before the industry of man; and the rapid increase of population and wealth, which a few years has produced, speak loudly in favor of the healthfulness of the climate, and of the internal resources of the country. The difficulty of establishing an indisputable title to lands, has been a cause operating hitherto to retard the progress of settlement, in some of the most fertile parts of the country of the Ohio; and the inconveniences resulting from this source, still continue to be felt.

On the 7th, we passed the mouth of the Kenhawa, and the little village of Point Pleasant. The spot now occupied by this village, is rendered memorable, on account of the recollections connected with one of the most affecting incidents, in the history of the aboriginal population. It was here that a battle was fought, in the autumn of 1774, between the collected forces of the Shawanees, Mingoes, and Delawares on one side, and a detachment of the Virginia militia, on the other. In this battle, Logan, *the friend of the whites*, avenged himself in a signal manner, for the injuries of one man, by whom all his women and children had been murdered. Notwithstanding his intrepid conduct, the Indians were defeated, and sued for peace; but Logan disdained to be seen among the suppliants. He would not turn on his heel to save his life. "For my country," said he, "*I* rejoice in the beams of peace; but, do not harbor a thought that mine is the joy of fear. Logan never felt fear. Who is there to mourn for Logan? Not one!" This story is eloquently related by Mr. Jefferson, in his "Notes on Virginia," and is familiar to the recollection of all who have read that valuable work.

In the afternoon of the 8th, we encountered a tremendous thunder storm, in which our boat, in spite of all the exertions we were able to make, was driven on shore; but we fortunately escaped with little injury, losing only our flagstaff with the lantern attached to it, and some other articles of little importance. On the following day we passed Maysville, a small town of Kentucky. On our return to Philadelphia, in 1821, we were delayed some time at this place; and taking advantage of the opportunity thus afforded, we made an excursion into that beautiful agricultural district, southeast of Maysville, about the large village of Washington. The uplands here are extremely fertile, and in an advanced state of cultivation. The disposition of the surface, resembles that in the most moderately hilly parts of Pennsylvania, and to the same graceful undulation of the landscape, the same pleasing alternation of cultivated fields, with dense and umbrageous forests, is added an aspect of luxuriant fertility, surpassing any thing we have seen eastward of the Alleghanies. Having prolonged our walk many miles, we entered after sunset a tall grove of elms and hickories; towards which we were attracted by some unusual sounds. Directed by these, we at length reached an open quadrangular area of several acres, where the forest had been in part cleared away, and much grass had sprung up. Here we found several hundreds of people, part sitting in tents and booths, regularly arranged around the area, and lighted with lamps, candles, and fires; part assembled about an elevated station, listening to religious exhortations. The night had now become dark, and the heavy gloom of the forest, rendered more conspicuous by the feeble light of the encampment, together with the apparent solemnity of the great numbers of people, assembled for religious worship, made considerable impression on our feelings.

As long as we remained among them, we observed nothing incompatible with the most rigid requirements of decorum, nothing in ill accordance with the solemn grandeur of the scene, they had chosen for their place of worship.

On the 9th May, we arrived at Cincinnati. Since our departure from Pittsburgh, Dr. Baldwin's illness had increased, and he had now become so unwell, that some delay appeared necessary on his account; as we wished also for an opportunity of making some repairs, and alterations in the machinery of the boat, it was resolved, to remain at Cincinnati some days. Dr. Baldwin was accordingly moved on shore, to the house of Mr. Glen, and Dr. Drake was requested to attend him. Cincinnati is the largest town on the Ohio. It is on the north bank of the river, and the ground on which it stands is elevated, rising gradually from the water's edge.

Compact limestone appears here, in the bed of the Ohio, and extends some distance in all directions. This limestone has been used in paving the streets, for which purpose its tabular fragments are placed on edge, as bricks are sometimes used in flagging. The formation of limestone, to which this rock belongs, is one of great extent, occupying a large part of the country from the shores of Lake Erie, to the southern boundary of the state of Tennessee.* It appears, however, to be occasionally interrupted, or over-laid by fields of sandstone. It abounds in casts, and impressions of marine animals. An orthocerite in the museum of the college at Cincinnati, measures near three feet in length. Very large specimens of what has been considered lignite, have also been discovered, and parts of them deposited in that collection. We saw here no remains of ammonites. Numerous other species, appear to be similar to those found in the limestone of the Catskill, and Hellebergh mountains.

The soil, which overlays the limestone of Cincinnati, is a deep argillaceous loam, intermixed with much animal and vegetable matter. Vegetation is here luxuriant, and many plants unknown eastward of the Alleghany mountains, were constantly presenting themselves to our notice. Two species of *Æsculus* are common. One of these has a nut as large as that of the *Æ.* Hippocastanum, of the Mediterranean, the common horse-chestnut of the gardens.

These nuts are round, and after a little exposure, become black, except in that part which originally formed the point of attachment to the receptacle, which is an oblong spot three fourths of an inch in diameter, the whole bearing some resemblance to the eye ball of a deer, or other animal. Hence the name *buck-eye*, which is applied to the tree. The several species of æsculus are confined principally to the western states and territories. In allusion to this circumstance, the indigenous backwoodsman is sometimes called buck-eye, in distinction from the numerous immigrants who are introducing themselves from the eastern states. The opprobrious name of Yankee is applied to these last, who do not always stand high in the estimation of the natives of the south and west. Few of these sectional prejudices are, however, to be discovered in Ohio, the greater part of the population here having been derived from New England. Cincinnati, which in 1810 contained 2,500 inhabitants, is now said to number about 12,000. Its plan is regular, and most of the buildings are of brick. The dwellings are neat and capacious, and sometimes elegant.

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* Drake's Picture of Cincinnati, page 64. To that work, Cramer's "Navigator" published at Pittsburgh in 1814, and Gilleland's "Ohio and Mississippi Pilot," we refer our readers for very minute, and, in general, very accurate accounts of the country along the Ohio.

The site of the town was heretofore an aboriginal station, as appears from the numerous remains of ancient works still visible. We forbear to give any account of these interesting monuments, as they have already been repeatedly described.

On Tuesday, the 18th, the weather becoming clear and pleasant, Dr. Baldwin thought himself sufficiently recovered to proceed on the voyage; accordingly having assisted him on board the boat, we left Cincinnati at 10 o'clock.

During our stay at that place, we had been gratified by the hospitable attentions of the inhabitants of the town. Mr. Glen was unremitting in his exertions to promote the recovery of Dr. Baldwin's health; to him, as well as to Dr. Drake, and several other gentlemen of Cincinnati, all the members of our party were indebted for many friendly attentions.

Below Cincinnati the scenery of the Ohio becomes more monotonous than above. The hills recede from the river, and are less elevated. Heavy forests cover the banks on either side, and intercept the view from all distant objects. This is, however, somewhat compensated by the magnificence of the forests themselves. Here the majestic platanus attains its greatest dimensions, and the snowy whiteness of its branches is advantageously contrasted with the deep verdure of the cotton-wood, and other trees which occur in thel ow grounds.

The occidental plane tree is, perhaps, the grandest of the American forest trees, and little inferior in any respect to the boasted plane tree of the Levant. The platanus orientalis attains, in its native forests, a diameter of from ten to sixteen feet. An American plane tree, which we measured, on the bank of the Ohio, between Cincinnati and the rapids at Louisville, was fourteen feet in diameter. One which stood, some years since, near the village of Marietta, was found, by M. Michaux, to measure 15. 7-10ft. in diameter, at twenty feet from the ground.* They often rise to an elevation of one hundred and fifty feet. The branches are very large and numerous, forming a spreading top, densely covered with foliage. Many of those trees, which attain the greatest size, are decayed in the interor of the trunk, long after the annual increase continues to be added at the exterior circumference. The growth of the American plane tree does not appear to be very rapid. It was remarked by Humboldt, that in the hot and damp lands of North America, between the Mississippi and the Alleghany mountains, the growth of trees is about one fifth more rapid than in Europe, taking for examples the platanus occidentalis, the liriodendron tulipifera, and the cupressus disticha, all of which reach from nine to fifteen feet in diameter. It is his opinion that the growth in these trees does not exceed a foot in diameter in ten years.† As far as our observation has enabled us to judge, this estimate rather exceeds than falls short of the truth. This growth is greatly exceeded in rapidity by the baobab, and other trees in the tropical parts of America; also by the gigantic adansonia of the eastern continent,‡ and equalled, perhaps, by several trees in our own climate, whose duration is less extended than that of those above mentioned.§

The sycamore, or occidental plane tree has been cultivated for more than one hundred and eighty years in England, yet

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* Voy. a l' ouest des monts Alleghany, 1804. P. 93.

† Pers. Nar. Vol. I. P. 357. Philadelphia Edition.

‡ Salt's Abyssinia, P. 49. Amer. Edit.

§ The cotton-wood tree is of very rapid growth. It has been ascertained that one individual, in the term of twenty-one years, attained the height of one hundred and eight feet and nine inches, and the diameter of twenty and an half inches, exclusive of the bark. Barton's Supp. Med. and Phys. Journ. P. 71.

river of similar character, [illegible], as we have had occasion in many instances to experience.

On the morning of the [illegible] we arrived at Louisville, having passed, in the night, the boats containing the sixth regiment of infantry, then on their way to the Missouri. At Louisville we stopped to procure a pilot to conduct our boat over the rapids. Two or three pilots are [illegible] stationed at or near the head of the rapids at Louisville, always holding themselves in readiness to go on board such boats as are about to descend the rapids, and leaving them again at Shippingport, for which service they are entitled to receive two dollars for each boat or ark.

At these rapids, called usually the falls of the Ohio, the river descends about twenty-two feet, in a distance of less than two miles. At times of high water no acceleration of motion, nor sound in some parts of the river, [illegible] is perceived in passing over this descent at other times the water is broken and thrown upon the rocky and uneven bed of the channel, called the Indian chute, through which a great part of the water passes. The magnificence of a cataract is however not displayed here, and it is only in peculiar conditions of the atmosphere, that the noise of the fall can be heard at the distance of one fourth of a mile from the bank of the river.

Large boats ascend the rapids at the time of the spring floods, by the aid of a cable made fast to a tree, or some other object above, and taken in by the capstan. In [illegible], the [illegible], a steam boat of about two hundred tons, was taken up, and had nearly reached the head of the rapids, when the cable broke, and the boat swinging round, was thrown against the rocks, in the bed of the river, and placed in such a situation as to render hopeless all attempts to get her off before the next annual rise of the water. Arks and small barges descend, by the aid of skilful pilots, for great part of the year. It is expected that the navigation of this dangerous rapid will soon be rendered more conveniently by canalling, which can be accomplished at a very inconsiderable expense. The direction of the Ohio, above and below the rapids, is nearly from north-east to south-west, but where the stream passes the rocky obstructions occasioning the fall, it is a little deflected from its course, making a bend towards the west. Thus a point is formed on the south-eastern side projecting from the adjacent bank, which, from its present position, would seem to indicate that the bed of the river had changed its place, having formerly traversed the point from north-east to south-west, in a direct line. In times of high floods the water is, in part, discharged through this old channel, and large boats are said to have ascended by that route within a few years past.

On this point stands the small town of Shippingport, at the foot of the rapids. The proposed canal will traverse the point in the rear of this village. The obstacles to be encountered in opening a canal at this place are but trifling. The soil is firm and gravelly, being based on horizontal strata of compact limestone, and fine argillaceous sandstone.

The sandstone, which is the rock of most common occurrence about the rapids, very closely resembles that of Pittsburgh. It is commonly of a compact texture, having an argillaceous cement, with a laminated structure. At Shippingport, and at Clarksville, in Indiana, it is succeeded by bituminous clay slate. While we were waiting at the rapids, several of the party made an excursion to visit the boiling spring, at the foot of the Silver Creek hills, in Indiana, at a little distance from New Albany. This spring is small, discharging no water above the surface of the ground. It is an artificial excavation in the clayey bank of a small stream, called Fountain Creek. It is filled to the level of the water in the creek, the spring itself evidently discharging very little, if any water. That which fills the basin is turbid, being kept in constant agitation by the bubbles of inflammable air which rises through it. The smell of sulphuretted hydrogen is perceptible at considerable distance about the spring, and a piece of silver, held near the surface of the water, was quickly tarnished. The Silver Creek hills are of argillaceous sandstone, and secondary clay slate; and this spring seems to be placed near the meeting of the two strata.

In the bed of the Ohio opposite Shippingport is a tabular mass of rocks visible above water for great part of the year, and called Corn Island. On the highest parts of this are remaining some small portions of the limestone stratum, which appears in many places to have been worn through and removed by the river. Five or six acres of the surface of this island are of the smooth compact argillaceous sand rock before mentioned, lying horizontally, and divided into squares and parallelograms by the natural fissures. These fissures contain some soil which supports, in the summer, a dense growth of herbaceous plants. Among these we noticed the Hypericum sphærocarpum of Michaux (apparently not the plant mentioned by Nuttall, under that name, which has been noticed near Philadelphia, by Collins, and others, but without doubt that originally described by Michaux). Two species of Andropogon, the Panicum virgatum, Solanum nigrum, Polygala verticillata, Leptanthus gramineus, Chenopodium botrys, &c. The lower part of the island is covered with loose sand, bearing some small cotton-wood and willow trees.

The unenclosed grounds, about Louisville and Shippingport, are extensive and afford pasturage to great numbers of domestic animals. They are, however, much overrun with luxuriant weeds. The Datura stramonium, which is common in every part of Ohio, is sometimes eaten by sheep, and the spiny capsules of the seed, when about half ripened, we have seen eaten with apparent avidity by cows. In addition to this loathsome plant, the common may-weed (anthemis cotula) has become abundant in all the waste grounds, to the exclusion of the native plants. A few of these, which keep their places with the greatest obstinacy by the road sides, are the Sida abutilon and S. spinosa, and the verbena hastata, while the thistles, Chrysanthemums, and Johnsworts so common about old fields, in New England, are not to be met with. The Elymus canadensis of *Pursh*, is one of the most frequent grasses along the streets.

The Silver Creek hills, are elevated about one hundred and fifty, or two hundred feet above the level of the country in the rear of Jeffersonville. They form a continuous range, crossing the country from north to south. On the Kentucky side they constitute the commencement of a rugged and broken district, called the *Knobs*, and extending far to the south. At some remote period this range may have formed a barrier, extending across what is now the immediate valley of the Ohio, and retarding the current of the waters from the tract above the falls. Coal occurs frequently in this range of hills, on the north side of the Ohio; quarries have been opened near the Blue river, in Indiana, about the two Pidgeons, opposite the mouth of Green river, and in various other places.

The larger steam boats which run on the Mississippi, and the Ohio, cannot usually go further than Shippingport, and several of them remain at this place, during several months of the summer, while the water is too low to admit their passing up and down the rivers. This time it is often necessary to spend in repairs of various kinds. The high steam engines require frequent repairs, and in the difficult navigation of the Mississippi the hulls of vessels are often injured. It frequently happens that the boats, built at Pittsburgh, and other places near the sources of the Ohio, be within three or four years after they are launched, in a condition to require the planking of the hulk to be replaced with new timbers. These boats are usually planked with the upland white oak; we have been informed that those boats which are built lower down on the river, and of such timber as is found in the low grounds, are more durable.

CHAPTER II.

*The Ohio below the Rapids at Louisville—ascent of the Mississippi from the mouth of the Ohio to St. Louis.**

Our small boat descended over the rapids without injury, and having taken on board some wood near New Albany, we proceeded on our voyage, with a pressure of steam equalling one hundred pounds to the square inch, upon all parts of the engine, exposed to its immediate operation. This enabled us to descend, at the rate of ten miles per hour. A small island in the Ohio, about twenty-three miles below the rapids, is called Flint Island, from the great numbers of fragments of flints, broken arrow points, and various instruments of stone, heretofore used by the Indians, which are found there on turning up the soil. This island has probably been the favourite residence of some tribe, particularly expert in the manufacture of those rude implements, with which the wants of the aboriginal Americans were supplied. The stone employed in these manufactures appears to have been in most instances, that compact flint, which occurs in nodular masses, in the secondary limestone. In one instance we met with a triangular prism, of a very hard and compact aggregate of feldspar, and hornblende, unlike any rock we have seen in the valley of the Mississippi. This prism was about five inches long, with faces of about an inch in width, and was perforated, from end to end, forming a complete tube, with an orifice, about half an inch in diameter, and smoothly polished, both within and without. We were never able to discover, to what use this implement could have been applied; nor do we recollect to have met with accounts of any thing analogous to it, except, perhaps, those "tubes of a very hard stone," mentioned by the Jesuit Venegas, as used by the natives of California, in their treatment of the sick.* That it may have passed, by means of the intercourse of various tribes of Indians, from the primitive mountains of California, to the rapids of the Ohio, is not perhaps, improbable. Indirect methods of communication may have conveyed the productions of one part of the continent to another, very remote from it. The savages of the Missouri, receive an intoxicating bean, from their neighbours on the south and west; these again, must probably procure it from other tribes inhabiting, or occasionally visiting, the tropical regions.

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* Observations were made, at Shippingport, to ascertain the rate of going of our chronometer, the latitude of the place, and for other purposes: according to these, the Falls are in 38° 15 23'' N.

In the Philadelphia museum, are many Indian pipes, of fine red indurated clay, found only, (so far as hitherto known,) on the Pipe Stone branch of the little Sioux river of the Missouri; one of these, however, was found on the banks of the Rio de la Plata, in South America; several were found in the territory now called New England, and in the north eastern part of the continent.

On the 26th we passed the mouth of the Wabash, and arrived at Shawaneetown, ten miles below. Near the mouth of the Wabash, an accident happened to the engine, which rendered it necessary for us to drift down, until we should arrive at some place, where repairs might be made. Some of the gentlemen of the party, determined to go on shore, and walk to Shawaneetown. In swimming across a creek, three miles above that place, Lieutenant Graham dropped his rifle in the water, and, having spent some time, in attempts to recover it, did not arrive at Shawaneetown, until after the boat had reached that place.

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* Page 100.

On the 9th several of the party went out to hunt in the forests, eight miles north-west of Shawneetown. At about four miles distance from the Ohio, they arrived at the banks of a small pond, three miles long, and only three or four hundred yards wide. Here they killed a turkey, and some small birds. On the bank of the pond was found a specimen of the Lake Erie tortoise,* depositing its eggs in the sand, at about twenty yards distance from the water. It had made, with its feet, a hole in the sand, two inches in diameter and four inches in depth, enlarging towards the bottom to three inches! This species occurs frequently in the ponds and stagnant waters along the Ohio. We first met with it near the rapids at Louisville. Among other birds, we saw whilst about Shawneetown, the pileated woodpecker, the minute tern, numerous flocks of the psittacus carolinensis, great numbers of young wood ducks, some gulls and semipalmated sandpipers. The terns appear to be attracted hither by great numbers of a species of phryganea, with which we found the stomachs of some of them filled. The semipalmated sandpipers were in large flocks, and did not appear stationary.

We left Shawneetown at twelve o'clock on the 10th, and stopped three miles below, to take in wood; then proceeding forward, at four P. M. we ran aground on a sand bar, seven miles above the "Cave Inn," or "House of Nature." After labouring assiduously by means of anchors and poles, with the aid of the engine, and till the men, who were under the necessity of jumping into the river, we at length succeeded in getting her off, and ran down to the Cave, where we laid by for the night.

Early the next morning, we went to visit the cave, of the entrance to which two views were sketched by Mr. Seymour. It is a perpendicular fissure, extending about one hundred and sixty feet, into the horizontal limestone cliffs, which here, form the north bank of the river. At times of high water, the Ohio flows in, and fills the cave nearly to its roof. In this cave, it is said, great numbers of large bones were some time ago found, but we saw no remains of any thing of this kind. Impressions and casts of the shells of submarine animals are seen in the rocks, forming the sides of the cave, as in all the strata of compact limestone, in this region. The organic remains here, do not appear to be so numerous as those of the rocks at the falls, and at Cincinnati; and are much less distinct, and visible in the fracture; indeed the fracture generally exhibits to the eye no vestige of organic remains. It is upon the surface only, and more especially in such parts of it as are in a certain stage of decomposition, that they are at all to be distinguished.

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* Testudo geographica of Lesueur.

As far as we could discover, they consist, chiefly of the caryophyllia, similar to the radiated species, so common at the falls of Ohio, of the encrinus, but of this our specimens were not so perfect, as to enable us to determine the analogy. Numerous other remains were exhibited, but not sufficiently characterised, to be referred to their proper places in the system. The top of the cliff, from which this fissure opens, is said to be the favourite haunt of great numbers of birds of prey. This is not improbable, as many hawks and birds of prey always choose high and inaccessible cliffs to build their nests in. We saw about the tops of these rocks, only one pair of hawks, which we took to be of the red shouldered species, (Falco lineatus,) but a heavy rain, which commenced soon after we had ascended, prevented us from procuring a specimen. About the cave, we found some fragments of pottery, arrow points, and other articles of Indian manufacture.

Near Shawaneetown are extensive salt manufactories, at a place heretofore called the United States' Saline, affording employment and a source of trade to a part of the inhabitants of that village. Common salt, with the muriate of lime, potash, &c. occur in great plenty, in connexion with the horizontal limestones and sandstones on the Ohio. Of these we subjoin some account, from the mineralogical report of Mr. Jessup.*

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* *Nitrate of Potash.* This salt occurs in most of the caves in the western states and territories. It is found in efflorescences and incrustations frequently combined with nitrate of lime. Its colour is grayish or yellowish white. The manufacture of nitre, in the numerous caves in Kentucky, is conducted as follows. The earths containing the nitrates of lime and potash are lixiviated; the lixivium is afterwards passed through the ashes of wood, by the alkali of which the nitrate of lime is decomposed. If the earths, after having been lixiviated, are replaced in the caves, they again become impregnated with the same salt.

One bushel of earth commonly yields from one to four pounds of nitre. The process by which nature supplies the consumption of this important article has not yet been discovered.

Muriate of Soda. In the United States, common salt has been usually found in solution combined with the sulphates of lime, magnesia and soda, and with sulphuretted hydrogen gas. The springs, yielding the greatest quantity of salt, are those of the Kenhawa, and Little Sandy rivers; the U. S. Salines near Shawaneetown, Illinois, Boon's Salines, near Franklin Missouri, and Lockhart's on the La Mine river.

The Kenhawa salt works supply about thirty thousand bushels of salt per annum. The rocks about these springs belong to the secondary formation, and are limestone, variegated sandstone and bituminous shale; we were informed that two hundred and fifty gallons of this water yield one bushel of salt. At the Salines of the Little Sandy ten thousand bushels are manufactured yearly. The waters, like those of the Kenhawa, hold in solution muriate and sulphate of soda, sulphate of lime, and probably a small portion of sulphate of magnesia. Limestone and sandstone are the only rocks to be met with in the neighborhood. The United States' Salines near Shawaneetown, produce at present about a hundred and thirty thousand bushels of salt per annum; they formerly yielded more than two hundred thousand in the same time. There are now seven furnaces in operation; the water is procured from three wells, two of which are rented by Maj. I. Taylor. At these works the salt water formerly issued from the earth at the surface. A well of sixteen feet deep, brought the workmen to a spring, which now discharges sixteen gallons of water per minute. Two hundred and fifty gallons yield fifty pounds of salt. About one thousand yards to the east of this well is a basin, or hollow, one hundred and thirty five feet in diameter. The soil in and about it is abundantly blended with fragments of earthen ware.

In the middle of this basin, a well has been sunk, which affords a more concentrated brine than that before mentioned; one hundred and ten gallons yielding fifty pounds of salt.

In digging this well, the first fourteen feet was through a light earth mixed with ashes and fragments of earthen ware; the remaining fourteen through a bed of clay, deeply coloured with oxide of iron, and containing fragments of pottery. The clay has sometimes the appearance of having been subjected to the action of fire. At the eastern side of the basin appears to have been a drain for the purpose of conveying away the super-

On the 29th of May we passed the mouths of the Cumberland and Tennessee, the two largest rivers, tributary to the Ohio. At the mouth of the Cumberland, is a little village called Smithland, where, for a considerable part of the year, such goods are deposited as are designed for Nashville and other places on the Cumberland.

The Cumberland and Tennessee rivers are, for many miles, nearly parallel in direction, and at no great distance apart. Between them are some low sandstone hills; but, we believe, no lofty range of mountains, as has been sometimes represented. About these hills, also, in the low ridges north of the Ohio, we found the sandstone, which appears to be the basis-rock, often overlaid with extensive beds of a puddingstone, wherein pebbles of white yellow and variously coloured quartz are united in a cement highly tinged by oxide of iron; extensive fields of compact limestone also occur in the same countries.

About half way between the mouth of the Cumberland and Tennessee, near the old deserted settlement, originally called Smithland, are several large catalpa trees. They do not, however, appear to be native, nor have we here, or elsewhere,

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abundant water. In this drain, about four feet below the surface of the earth, is a layer of charcoal about six inches deep. The stones in the vicinity appear as if they had been burnt. Four miles west of this point, a well has been sunk sixty feet through the following beds.

First—twenty feet of tenacious blue clay, at the bottom of which they came to a small spring of salt water.

Second—another bed of clay, of a similar character, twenty-five feet thick.

Third—a bed of quicksand, about ten feet deep; in which they met with a large vein of salt water.

Bones of the mammoth, and other animals, were found both in the clay and sand. The original reservation at these salines comprised ninety-two thousand one hundred and sixty acres of woodland, and was transferred from the United States to the State of Illinois, at the time of the admission of the latter into the union. The rents amount to ten thousand dollars per annum.

Nitrate of Lime is found in the calcareous caverns of Kentucky; accompanying nitrate of potash, with which it is intimately blended in the earth, on the floors of the caves. It is also sometimes found in delicate acicular crystals, shooting up from the walls and floors of the caverns.

been able to discover any confirmation of the opinion, that this tree is indigenous to any part of the United States.

It is here called *catawpa*, which, as well as *catalpa*, the received appellation, may be a corruption from Catawba, the name of the tribe by whom, according to the suggestion of Mr. Nuttall, the tree may have been introduced. Following the directions of the Pittsburgh navigator, we kept near the left shore, below the Cash river, by which means we again run our boat aground, on a sandbar, where we spent considerable part of the night in the most laborious exertions. These were at length crowned with success, and having the boat once more afloat, we proceeded with greater caution.

On the 30th, we arrived at a point a little above the mouth of Cash river, where a town has been laid out, called America. It is on the North bank of the Ohio, about eleven miles from the Mississippi, and occupies the first heights on the former, secure from the inundation of both these rivers, (if we except a small area three and a half miles below, where there are three Indian mounds, situated on a tract containing about half an acre above high water mark.) The land on both sides of the Ohio, below this place, is subject to be overflowed to various depths, from six to fourteen feet in time of floods; and on the south side, the flat lands extend four or five miles above, separated from the high country by lakes and marshes. The aspect of the country, in and about the town, is rolling or moderately hilly, being the commencement of the high lands, between the two rivers. Above immediately below it, however, the land is flat, having the character of the low bottoms of the Ohio. The growth is principally cottonwood, sycamore, walnut, hickory, maple, oak, &c. The soil is first rate, and well suited to the cultivation of all products, common to a climate of 37 Deg. N. Lat. From the extensive flat, or bottoms, in its neighbourhood, and the heavy growth of timber, which here generally prevails, it is probable that the place will be unhealthy, till extensive clearings are made in its vicinity.

This position may be considered as the head of constant navigation for the Mississippi. The Mississippi from New Orleans to the Ohio, is navigable for boats of the largest size, and America may be considered as the head of constant as well as heavy navigation. Ice is seldom to be found in the Mississippi, as low down as the mouth of the Ohio and never in so large quantities as to oppose any serious obstruction to the navigation.

The navigation of the Ohio has a serious impediment about four and a half miles above the town, occasioned by a limestone bar, extending across the river, called the Grand Chain. This bar is impassable in the lowest stage of the water, and will not admit boats of any considerable burthen, except in the higher stages.

The Mississippi has, in like manner, two bars, called the Big and Little Chain, which appear to be a continuation of the same range of rocks as that in the Ohio, extending across the point of land situated between the two rivers. These bars are situated a little above the Tyewappity Bottom, about thirty miles above the mouth of the Ohio, and in low water have but a moderate depth of water across them, which, added to the rapidity of the current, occasions a serious obstacle to the navigation.

Boats suited to the navigation of both rivers above the bars here specified, should be of inferior size; those for the Mississippi, not exceeding one hundred tons burden, and those for the Ohio, from fifty to seventy-five tons.

Any position on the Mississippi in the neighbourhood of the Ohio, would be objectionable for the following reasons: First, The rapidity of the current, which renders it difficult to find a safe and commodious landing, there being no rock-bound shore within thirty miles above and a far greater distance below the point.—The Iron Banks, seventeen miles below the mouth of the Ohio, have been thought by some an eligible position for the extensive business, which, it is admitted by all, must center in this neighbourhood.—But at this place there no safe landing; and besides the banks are composed of layers of sand and clay alternating with each other, of an acclivity nearly perpendicular, and annually wearing away, by the current of the river, which sets strongly against them. These banks are elevated about one hundred and thirty feet above the common level of the river, and are inaccessible, excepting a circuitous road, leading from the river a considerable distance above and below them.

Second, There are no positions on the Mississippi, except the Iron and Chalk Banks, for a great distance below the Ohio, secure from inundation. The bottom directly opposite the mouth of the Ohio, on the west side of the Mississippi is elevated a little above high water, but as it is an alluvial shore, having no permanent foundation, and the banks often falling in, it affords no conveniences or security as a place of business.

Third, No places of anchorage for boats of heavy burden are to be found, except in the main channel of the river, where they would be exposed to drift wood, great quantities of which are brought down in times of freshet,—and when borne along with the rapid current of the river occasion serious danger to boats lying in its way.

The town of America is almost entirely exempt from any of these objections—although it has not a rocky foundation, (which may be said of most of the towns on the Ohio,) the current of the river is so gentle, that no such guard against the undermining and wasting away of the banks, is required. In case of an excessive flood, or an unusual quantity of floating ice, (which may possibly be apprehended in remarkably cold seasons) the mouth of Cash river, five miles below the town, is a harbour, in which boats may lie in perfect security.*

"We would not encourage the idea, that the site now fixed upon as a town is exclusively the point where business is to be done; but that the town will eventually extend along on that side of the river about four miles, to the Big Chain above described.

"In view of the great extent of inland navigation centering at this place, and the incalculable amount of products, to be realized at no distant period, from the cultivation of the rich vallies and fertile plains of the west; a great proportion of which must find a market here; no doubt can be entertained that it will eventually become a place of as great wealth and importance, as almost any in the United States.

In the afternoon of the 30th we arrived at the mouth of the Ohio.

This beautiful river has a course of one thousand and thirty-three miles, through a country surpassed in fertility of soil by none in the United States. Except in high floods, its water is transparent, its current gentle and nearly uniform. For more than half of its course its banks are high, and its bed gravelly. With the exception of about two miles at the rapids, at Louisville, it has sufficient depth of water, for a part of the year, to float vessels of 300 tons burthen to Cincinnati. The country which it washes, may, with propriety, be considered under two divisions. The first, extending from its head at Pittsburgh, to the little town of Rockport, about 100 miles below the falls or rapids at Louisville, is hilly. This district forms a portion of one of the sides of that great formation of secondary rocks, which occupies the basin of the Mississippi and its tributaries. This formation, like others of the same period, is simple, with small exceptions, which are most considerable on its borders, and diminish in proportion as we approach toward its central parts.

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* Although the range from extreme high to extreme low water, amounts to sixty feet perpendicular, in many parts of the Ohio, it does not exceed twenty feet at this place, owing to the width to which the Ohio spreads in this neighbourhood, when the river is high. This may be considered a circumstance much in favour of the place, which, compared with the disadvantages most other positions on the Ohio labour under, from inundation in high water, and the difficulty of unloading in low.

Compact limestone, and sandstone of several varieties, are the rocks which occur along that portion of the Ohio we are now considering. Sandstone of a light gray or yellow colour, of a compact texture, or argillaceous, and a slaty or laminated structure, is the most abundant, and composes the lowest points which we have hitherto been able to examine. This rock frequently contains alternating beds of coal, bituminous shale, and its accompanying minerals. The beds of compact limestone, which occur in this region, usually rest upon the sandstone just mentioned. Considered as a stratum, its distribution is the reverse of that of the sandstone. It occupies the central and least elevated portions of the formation, and on the borders where the sandstone is most abundant, the limestone is of less extent and of more uncommon occurrence. These remarks are applicable to the hilly district on the upper portion of the Ohio river. From Pittsburgh to Cincinnati, the prospect from the river is that of hills of moderate elevation, sometimes rocky and abrupt, but often sufficiently gradual in their ascent, to admit of cultivation to their summits. Their character, as to extent, direction, &c. seems to be determined by the number, direction and magnitude of the streams which traverse them. They are the remains of what was formerly a continuous and nearly horizontal surface, with a large deposit of superincumbent soil, which the flowing of water, during the lapse of ages, has diminished and excavated to its present form. These hills diminish in altitude as you approach the falls from above; there they again rise to a height nearly equal to what they attain at the head of the river, and from thence gradually diminish, until they disappear, a little above the confluence of the Ohio and Green rivers. Here commences the low country, which extends west to the Mississippi. It is characterized by the great extent of the river alluvion, the increased width and diminished velocity of the stream. The river banks are low, but thickly wooded with sycamore, cotton wood, river maple, the planera aquatica, cypress, &c. The river hills, which terminate the alluvial district, are distant and low, and it often happens that the surface descends on both sides, from the immediate banks of the river to these hills. Hence when the waters of the river are sufficiently swollen to flow over its banks, they inundate extensive tracts, from which they cannot return to the channel of the river, and are left stagnant during the summer months, poisoning the atmosphere with noxious exhalations. Many of these inundated tracts have a soil of uncommon fertility, which it is probable will hereafter be recovered from the dominion of the river, by dykes or levees.

The beach or sloping part of the immediate bank of the Ohio, throughout its whole extent, is of rather gradual ascent, and covered with timber a considerable distance below high-water mark. The average rapidity of the current of the Ohio is about two and an half miles per hour, and the descent of its surface nine inches per mile, as estimated by Dr. Drake of Cincinnati. The annual inundations happen in the spring. The range between extreme high and low water, in the upper part of the river, is more than 60 feet; but below, where it is not confined by high banks, it is much less.

About the falls of Ohio, the cane, (myegia macrosperma of Persoon,) begins to be seen, and increases in quantity thence westward to the Mississippi. The "Cave inn Rock," or "House of Nature," which we have before mentioned, is an immense cavern, penetrating horizontally into a stratum of compact limestone, which forms the river bank for some distance above Golconda in Illinois. Its entrance is a large and regular arch, placed immediately on the brink of the river, and a similar form is preserved in some degree through its whole extent. The Battery rock is a high mural precipice of the same stratum, running in a straight line, and forming the northern bank of the river, which washes its base. The face of this precipice is smooth and naked, and it is surmounted by a heavy growth of timber. This limestone is compact, entirely horizontal in its position and filled with organic remains. It is traversed by veins containing sulphuret of lead, and at several places near Golconda, this is accompanied by fluat of lime, in beautiful yellow and violet coloured crystals. Fluat of lime is also found disseminated in small and irregular masses throughout the rock. At Golconda, six miles below the cave, a coarse, gray, flinty sandstone is found, extending some distance to the west. This rock forms broad hills on the Kentucky side, between the Cumberland and Tennessee rivers; where it abounds in iron ore of several kinds. Perhaps these hills ought to be considered as a spur from the Cumberland hills. At the mouth of the Tennessee river, is a locality of the columnar argillaceous oxide of iron, which rises from the surface in pyramidal and columnar masses, somewhat resembling the cypress knees.

An extensive tract of land between the Tennessee and Mississippi rivers, included in the recent purchase from the Cherokees, is rocky and broken, abounding in ores of iron and lead, and probably some other minerals. We have seen a specimen of sulphuret of Antimony, in possession of an inhabitant, who being a sort of alchemist, greatly delighting in mystery, thought it imprudent to reveal the secret of its particular locality. It is to be hoped, future and more minute examinations than we had the opportunity of making, may hereafter detect valuable mineral depositions in this tract.

The confluence of the Ohio and Mississippi, is in latitude 37° 22′ 9″ north according to the observations of Mr. Ellicott, and in longitude 88° 50′ 42″ west from Greenwich. The lands about the junction of these two great rivers are low, consisting of recent alluvion and covered with dense forests. At the time of our journey, the spring floods having subsided in the Ohio, this quiet and gentle river seemed to be at once swallowed up, and lost in the rapid and turbulent current of the Mississippi. Floods of the Mississippi, happening when the Ohio is low, occasion a reflux of the waters of the latter, perceptible at fort Massac, more than thirty miles above. It is also asserted that the floods in the Ohio occasion a retardation in the current of the Mississippi, as far up as the little chain, ten miles below Cape Girardeau.* The navigation of the Mississippi above the mouth of the Ohio, also that of the Ohio, is usually obstructed for a part of the winter by large masses of floating ice. The boatmen observe that soon after the ice from the Ohio enters the Mississippi, it becomes so much heavier by arresting the sands, always mixed with the waters of that river, that it soon sinks to the bottom. After ascending the Mississippi about two miles, we came to an anchor, and went on more on the eastern side. The forests here are deep and gloomy, swarming with innumerable mosquitoes, and the ground overgrown with enormous nettles. There is no point near the confluence of the Ohio and Mississippi, from which a distant prospect can be had. Standing in view of the junction of these magnificent rivers, meeting almost from opposite extremities of the continent, and each impressed with the peculiar character of the regions from which it descends, we seem to imagine ourselves capable of comprehending at one view all that vast region, between the summits of the Alleghanies and of the Rocky Mountains, and feel a degree of impatience at finding all our prospects limited, by an inconsiderable extent of low muddy bottom lands, and the unrelieved, unvaried, gloom of the forest.

Finding it necessary to review the packing of the piston in the steam engine, which operation would require some time, most of the gentlemen of the party were dispersed on shore in pursuit of their respective objects, or engaged in hunting. Deer, turkies, and beaver, are still found in plenty in the low grounds, along both sides of the Mississippi, but the annoyance of the mosquitoes and nettles preventing the necessary caution and silence in approaching the haunts of these animals, our hunting was without success.

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* Schultz's Travels, p. 92. v. 2.

We were gratified to observe many interesting plants, and among them several of the beautiful family of the Orchidæ,[*] particularly the orchis spectabile, so common in the mountainous parts of New England.

The progress of our boat against the heavy current of the Mississippi, was of necessity somewhat slow. Steam boats in ascending, are kept as near the shore as the depth of water will admit, and ours often approached so closely as to give such of the party as wished, an opportunity to jump on shore. On the first of June, several gentlemen of the party went on shore six miles below the settlement of Tyawapatia bottom, and walked up to that place through the woods. They passed several Indian encampments, which appeared to have been recently tenanted. Under one of the wigwams they saw pieces of honey comb, and several sharpened sticks, that had been used to roast meat upon, on a small tree near by was suspended the lower jaw-bone of a bear. Soon after leaving these they came to another similar camp, where they found a Shawanee Indian and his squaw with four children, the youngest lashed to a piece of board and leaned against a tree.

The Indian had recently killed a deer, which they purchased of him, for one dollar and fifty cents—one-third more than is usually paid to white hunters. They afterwards met with another encampment, where were several families. These Indians have very little acquaintance with the English language, and appeared reluctant to use the few words they knew. The squaws wore great numbers of trinkets, such as silver arm bands and large ear rings. Some of the boys had pieces of lead tied in various parts of the hair. They were encamped near the Mississippi, for the purpose of hunting on the islands. Their village is on Apple creek, ten miles from Cape Girardeau.

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[*] The cymbidium hiemale of Willdenow, which has been placed by Mr. Nuttall under the genus corallorhiza of Haller, occurs in the fertile soils of the Mississippi, with two radical leaves, as described by the early authors; Mr. N.'s amended description is therefore only applicable to the plant, as it occurs in the eastern states, where it is commonly found to have but a single leaf.

June 2nd. As it was only ten miles to Cape Girardeau, and the progress of the boat extremely tedious, several of the party, taking a small supply of provisions, went on shore, intending to walk to that place.

Above the settlement of Tyawapatia, and near cape a la Bruche, is a ledge of rocks, stretching across the Mississippi, in a direct line, and in low water forming a serious obstacle to the navigation. These rocks are of limestone, and are placed at the commencement of the hilly country on the Mississippi. Here the landscape begins to have something of the charm of distant perspective. We seem released from the imprisonment of the deep monotonous forest, and can, occasionally, overlook the broad hills of Apple Creek, and the Au Vaise, or Muddy river of Illinois, diversified with a few scattered plantations, and some small natural meadows.

About five miles above Cape Girardeau we found the steam boat Jefferson, destined for the Missouri. She had been detained some time waiting for castings which were on board the Western Engineer. Several other steam boats, with stores for the troops about to ascend the Missouri, had entered that river, and were waiting to be overtaken by the Jefferson, and the Calhoun, which last we had left at the rapids of the Ohio. On the 3d of June we passed that insular rock in the middle of the Mississippi, called the Grand Tower. It is about one hundred and fifty feet high, and two hundred and fifty in diameter. Between it and the right shore is a channel of about one hundred and fifty yards in width, with a deep and rapid current.

In the summer of 1673, Father Marquette and M. Joliet descended the Mississippi, probably as far as the mouth of the Arkansa. Their narrative contains sufficient evidence that they passed the mouth of the Missouri, the Grand Tower, the mouth of the Ohio, &c. As their work may not be easily accessible to many of our readers, we subjoin, in a note, an interesting passage, in which these objects are mentioned.[*]

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[*] They left the Illinois about the middle of June. Of the rocky cliffs below the confluence of that river Father Marquette speaks as follows: "Among the rocks I have mentioned, we found one very high and steep, and saw two monsters painted upon it, which are so hideous that we were frightened at first sight, and the boldest savages dare not fix their Eyes upon them. They are drawn as big as a Calf, with two Horns like a Wild-Goat. Their looks are terrible, though their face has something of human figure in it. Their Eyes are red, their Beard is like that of a Tiger, and their body is covered with Scales. Their Tail is so long that it goes o'er their Heads, and then turns between their Fore-Legs under the Belly, ending like a Fish Tail. There are but three Colours, viz. Red, Green, and Black; but these monsters are so well drawn that I cannot believe the Savages did it. And the Rock, whereon they are painted, is so steep that it is a Wonder to me how it was possible to draw those Figures: But to know to what purpose they were made is as great a Mystery. Whatever it be, our best Painters would hardly do better.

As we fell down the River, following the gentle Stream of the Waters, and discoursing upon those Monsters, we heard a great noise of waters, and saw several small Pieces of Timber, and small floating Islands, which were huddled down the River *Pekitanoui*. The waters of this stream (the Missouri) are so muddy, because of the violence of its Stream, that it is impossible to drink of it, and they spoil the Clearness of the Mississippi, and make its navigation very dangerous in this Place. This river runs from the North-West, and I hope to discover, in following its channel to its source, some other river that discharges itself into the *Mer Marveja* or the *Californian-Gulph*.

"About twenty Leagues lower than the Pekitanoui, we met another river, called the Ouabouskigou; but before we arrived there, we passed through a most formidable Place to the Savages, who believe that a *Manito* or Devil resides in that Place to deliver such as are so bold as to come near it. This terrible *Manito* proves to be nothing but some rocks in a turning of a river, about thirty feet high, against which the stream runs with great violence." This is probably the Grand Tower. "The River *Ouabouskigou* (Ohio) comes from the eastward. The *Chaouanons* (Shawnees) inhabit its banks, and are so numerous that I have been informed there are thirty-eight villages of that nation situated on this river."

The strata of sandstone containing the extensive beds of coal which have been explored, about the Muddy river of Illinois, are here divided transversely by the bed of the Mississippi. The Grand Tower, the precipice opposite the mouth of the Obrazo, containing the singular cavity called the Devil's Oven, the Cornice Rock, and other remarkable cliffs, are monuments indicating the great extent to which the Mississippi has channelled its bed in these strata of horizontal sandstone.

The Grand Tower, from its form and situation, strongly suggests the idea of a work of art. It is not impossible that a bridge may be constructed here, for which this rock shall serve as a pier. The shores, on both sides, are of substantial and permanent rocks, which undoubtedly extend across, forming the bed of the river. It is probable, however, that the ledge of rocks called the two chains, extending down to cape a la Bruche, presents greater facilities for the construction of a bridge than this point, as the highlands there approach nearer the river, and are less broken than in the neighbourhood of the Grand Tower. The Ohio would also admit of a bridge at the chains, which appear to be a continuation of the range of rocks here mentioned, crossing that river fifteen miles above its confluence with the Mississippi. We look forward to the time when these great works will be completed.

Compact and sparry limestones are frequent in this region; but all the rocks seem to be acted upon with great rapidity by currents of water. The country on the east side of the Mississippi, back of fort Chartres, and about the river St. Mary, is much broken by sink holes, having the form of a funnel, and occasioned, probably, by the action of subterraneous streams of water finding their way through the friable sandstones, which underlay the deep and fertile soils in those places. We passed in succession the mouths of the river St. Mary, opposite to which is the fine settlement of the Bois Broule bottoms, the Oco[illegible] Kaskaskia river, the St. Lora, a handsome stream, from the west, and the Gabaree Creek, on which stands the old French town of St. Genevieve. The navigation of the Mississippi, above the mouth of the Ohio, is at all times difficult. The current is considerably accelerated by the descent of the river over the rocky traverses which cross its bed. At times of low water, innumerable sand-bars occur in various parts of the channel, rendering the navigation extremely precarious.

A little below the mouth of the Kaskaskia, is a creek called the Saline, entering on the west side. A grant of a tract of land, one league square, was here made by the Spanish government, in favour of a Frenchman named Pegreau, the founder of the deserted town called New Bourbon. The tract included a valuable brine spring, near the mouth of the creek. The proprietor built a house near the bank of the Mississippi, where he resided for some time, and carried on a manufacture of salt; but having occasion to go to France, he rented his works to a man, who for want of funds, or for some other reason, failed to keep them in operation. After the transfer of Louisiana to the United States' Government, this grant, among others, became an object of speculation; and advantage being taken of Pegreau's absence, the worthless tenant was instigated to prosecute his landlord for breach of contract, and by a legal process recovered damages to the amount of nine thousand dollars, for the disbursement of which the property was sold and fell into the hands of the present proprietors.

At the mouth of the Kaskaskia river, on the east bank of the Mississippi, a town has been recently commenced called Portland. The highlands approach here to the brink of the river, affording an elevated and advantageous site, the landing is said to be good, and there is reason to expect that Portland will soon rival the old town of Kaskaskia, the present seat of great portion of the mercantile business in this part of Illinois.

On the 5th the wind blew from the south-east, and with the aid of sails we were enabled to ascend the river with considerable rapidity. As we were proceeding briskly forward, our boat struck upon one of those concealed trunks of trees so frequent in the Mississippi, and soon afterwards we discovered that a leak had occurred, which made it necessary for us to lay by. By the constant use of the pumps during the remainder of the day, and the following night, we were able to prevent the water from gaining further upon us, and the next day having discovered the leak, we raised the stern of the boat, by means of a pair of shears, and succeeded in repairing the injury.

On the beach opposite the place where we lay by for these repairs, was a large flock of pelicans, which remained in sight for several hours. We had met with some wild geese; and a swan, which we saw was unable to fly, having at that time cast its feathers. The yellow breasted chat, chuck-wills-widow, the falco haliætus, the king fisher, bank swallow, and numerous other birds occurred.

At the mouth of the Kaskaskia river, on the east side of the Mississippi, commences the celebrated valley called the American bottom, extending along the eastern bank of the river last mentioned to the Piasa hills, four miles above the mouth of the Missouri. It is several miles in width, and has a soil of astonishing fertility, consisting of comparatively recent depositions from the river. It has all the disadvantages usually attending tracts of recent river alluvion, the most valuable parts of it being liable to be swept away by the current of the Mississippi, and its surface descending from the brink of the river to the stagnant pools and lagoons, at the outskirts of the valley. But the inexhaustible fertility of its soil makes amends for the insalubrity of the air, and the inconveniences of a flat and marshy situation, and this valley is undoubtedly destined to become one of the most populous parts of America. We were formerly shown here a field that had been cultivated, without manure, one hundred years in succession, and which, when we saw it, (in August 1819) was covered with a very luxuriant growth of corn.

The town of Kaskaskia, the villages of Prairie de Roches, Kahokia, Prarie Dupont, Harrisonville, and Fort Chartres, are situate in this tract. Some of them are in a flourishing condition. Fort Chartres, which was built by the French government, at the expense of one million and an half of dollars, stood near the bank of the river, about twenty miles from Kaskaskia. Not long after they were erected, a part of the works were undermined by the washing of the river, since which time the whole has been suffered to remain in ruins, which are now one fourth of a mile distant from the river.*

The country west of the Mississippi, opposite the American bottom, is of a very different character. The highlands approach the river, presenting abrupt declivities, prominent points, and in many places perpendicular precipices from one to two hundred feet high, frowning over the brink of the river. One of the most remarkable of these is known by the name of the Cornice rock. It bounds a narrow arm of the river, which has generally sufficient water to admit the passage of boats. The rock extends nearly in a straight line, having a front of about four hundred yards, the brow of the precipice at some points impending over the channel through which boats pass. The rock rises above, to the height of fifty or sixty feet, smoothly rounded by the attrition of the water, which never rising to the upper part of the precipice, leaves that to project in the form of a cornice. Though the lands on the west side of the Mississippi are less fertile than those of the American bottom, they are of great value, and have long been objects of scandalous speculation.

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*It is stated by Mr. Schultz that Fort Chartres, which was originally built one fourth of a mile from the river, was undermined in 1772.

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Among a variety of stratagems, practiced in this part of the country, to obtain titles to lands, was one which will be best explained, by the following anecdote, related to us by a respectable citizen of St. Genevieve. Preparatory to taking possession of Louisiana, in 1803, the legislature passed a law, authorising a claim to one section of land, in favor of any person, who should have actually made *improvements*, in any part of the same, previous to the year 1804. Commissioners were appointed, to settle all claims of this description; more commonly known, by the name of improvement rights. A person, some where in the county of Cape Girardeau, being desirous of establishing a claim of this kind to a tract of land, adopted the following method. The time having expired for the establishment of a right, agreeably to the spirit of the law, he took with him two witnesses, to the favourite spot, on which he wished to establish his claim, and in their presence, marked two trees, standing on opposite sides of a spring; one with the figures 1803, the other 1804, and placed a stalk of growing corn, in the spring. He then brought the witnesses before the commissioners, who upon their declaration, that they had seen corn growing at the place specified, in the spring between 1803 and 1804, admitted the claim of the applicant, and gave him a title to the land. In the old district of Cape Girardeau, as in other parts of Louisiana, the difficulty of establishing indisputable titles to the lands, arising out of the great number of Spanish grants, preemption, and improvement claims, has greatly retarded the settlement of the country.[*] Establishments were made here more than one hundred and fifty years since; yet the features of the country are little changed, retaining the rudeness and gloominess of the original forest.

At five o'clock, on the afternoon of the sixth, we passed the Platteen rock, a perpendicular precipice, not unlike the

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[*] Ample information, on the subject of land titles, is contained in Stoddart's Sketches of Louisiana, page 243—267.

Cornice rock, near the mouth of a creek of the same name. Along the base of this cliff, we found the water three and some times four fathoms deep. In the evening we arrived at Herculaneum, a small village on the west side of the Mississippi, depending principally upon the lead mines, for its business.

Here are three shot manufactories, all of them built at the summit of perpendicular precipices; by which means, the expense of erecting high towers has been avoided. Thirty or forty miles to the south-west of Herculaneum, commences the region of the lead mines, which, though not yet satisfactorily explored, is known to extend for many miles through the hilly country, at the sources of the Merameg, the St. Francis, and the other small rivers, rising in the angle between the Mississippi and Missouri, below the mouth of the latter river.

Soon after the cession of Louisiana to the United States, particular care was taken to have all claims to land investigated and registered. Some few, may have been omitted, which may be hereafter revived, but these cannot be numerous. In all the recent sales of public lands in the western states and territories, liberal reservations have been made for the encouragement of learning. We subjoin some particulars, extracted from a communication of the commissioner of public lands. From this statement, it will be easy to form an idea, of the liberal provision made by government, for the future support of schools and colleges. It is probable, similar grants will be made to the Eastern States.*

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* A township is a square whose sides, (bounded by true meridians and parallels to the equator,) are each 6 miles in length; area 36 square miles, or sections, each containing 640 acres; each township contains 23,040 acres; a quarter section is a square whose sides (bounded by meridians and parallels,) are each 1-2 a mile, and contain 160 acres. The corners of each section are distinctly marked by the United States' deputy surveyors. The sections are numbered from 1 to 36, begining at the N. E. corner of the township, and going from right to left, to the N. W. corner,

On the 7th, after taking in wood at Herculaneum, we moved up the river; but had scarcely passed the mouth of the Merameg, when we found ourselves unable to stem the heavy current of the Mississippi, on account of the great quantities of mud, that had accumulated in the boilers, and prevented our raising the requisite pressure of steam. While we were lying at anchor, to afford the steam engineer an opportunity to clean the boilers, some gentlemen of the party, returned along shore, to the Merameg, a beautiful river, whose limpid and transparent waters present a striking contrast to the yellow and turbid Mississippi. They were fortunate in meeting with many interesting objects,

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and then returning from left to right to the E. boundary of the township, and so on.

The act of February 22, 1817, authorises the sale, in *half quarter sections*, (or 80 acres) of the sections 2, 5, 20, 23, 30, 33, of each township. The subdivision of the quarter section is made by true meridians.

The section *No.* 16 in every township is, by law, reserved for the support of schools; the S. E. corner of that section, is the centre of each township.—More than 60 million acres of United States' land, have already been surveyed—1-36 part of 60 million is 1,666,666 acres, reserved by law for the support of schools. The section No. 16 will unquestionably be reserved in all future surveys and disposals of public lands.

For Colleges and Seminaries of a higher grade thirteen whole townships have already been granted by the United States to Michigan, Ohio, Indiana, &c. Thirteen townships are equal to 299,520 acres.

By section 2 of the act of April 18, 1806, relative to Tennessee, 200,000 acres are, in that state, reserved for colleges and academies.

The reservations for schools, colleges, &c. are—

Section No. 16	1,666,666
13 townships	299,520
Reservation in Tennessee . .	200,000
	2,166,186 acres,

which, at the minimum price established previous to the year 1820, of two dollars per acre, is $4,332,372.

The area of the whole state of Ohio, (the oldest of the states N. of the Ohio,) is about 25 million of acres, of this about 14,400,000 had been surveyed anterior to the late cessions, which embrace the N. W. part of that state, 1-36 part of 14,400,000 is 400,000.

The free spirit of Ohio, united with equal industry and economy, has already given to section 16, in the surveyed portion of the state, a value of at least 4 dollars per acre, or of 1,600,000 dollars. There are instances, in which section 16, in Ohio is worth from 20 to 30 dollars per acre.

National Intelligencer of November 10, 1819.

and, among others, an undescribed mus, which has received, from Mr. Ord, the name of floridanus.* Upon the specimen, which was a male, was a dilated, glabrous, ventral line, 2 1-2 inches long. This species is well known in some districts, under the name of large hairy tailed rat, and is by no means rare in Florida. It is as large as the ordinary stature of the Norway rat, and is equally troublesome. The contents of its stomach were entirely vegetable; consisting of the green bark of trees, and the young shoots of plants. Their nests are large, and are composed of a great quantity of brush. Dr. Baldwin had rarely been able to join in the excursions on shore. Plants were, however, collected and brought to him on board the boat, where he spent much of his time in the examination of such as were interesting or new.†

A few rods above our anchoring ground, were two graves, supposed to be those of Indians. One of them was quite recent, and both were covered with heaps of loose stones, probably designed as monuments, and to protect the graves from the ravages of wolves or other animals. The eighth of June, brought us to the small village of Vide Poche, and the following day to St. Louis, where our arrival was noticed by a salute, from a six pounder on the bank of the river, and the discharge of ordnance on board several of the steam boats lying in front of the town.

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* *Genus Mus, L.*

M. Floridanus Ord. *Say.* Body, robust; hair plumbeous above, the back, and upper of the tail, ferruginous-yellowish, the plumbeous near its base; all beneath white; tail hairy, above brown, as long as the body; head plumbeous, intermixed with gray, gradually attenuated to the nose; ears large, prominent, patulous, obtusely rounded, naked or furnished with obsolete, sparse hairs above, and on the margin within; eyes moderate, prominent; whiskers, some black, and some white bristles, elongated, longest surpassing the tips of the ears, arranged in six longitudinal series; superior labia, and those of the angles of the mouth, folded into the mouth, and hairy within; *legs*, subequal, robust; anterior legs with a few white projecting setæ near the feet behind; feet white; toes annulate beneath, with impressed lines, intermediate ones equal, exterior ones equal, interior thumb minute; palm with five tuberculous prominences, of which the anterior ones are placed triangularly, and the others transversely; nails concealed by the hairs; *posterior feet*, inner toe the shortest, 2d, 3d, and 4th, subequal, the 3d slightly longest, all beneath annulated; nails concealed by the hairs; palm with 6 tubercles, of which the 2 posterior ones are distant from each other. Entire length, from nose to tip of tail, 16 inches nearly; tail 7 inches—ear rather more than 9-10th of an inch long; greatest breadth 1 inch. From tip of nose to anterior canthus of the eye 1 1-20 inches. Length of the eye nearly 2-5.

† Near the mouth of the Muskingum were collected the Rudbeckia *hirta*, and R. purpurea, a small white-flowering species of Houstonia, the Galium tinctorium, Smyrnium aureum, a phlox, a new species of potentilla, a conyza, the trifolium *reflexum*, a beautiful aira, the campanula perfoliata, diospyros virginiana, rhus glabra, and many others. *Dr. Baldwin's MS. notes.*

CHAPTER III.

Tumuli and Indian graves about St. Louis, and on the Merameg—Mouth of the Missouri—Charboniere—Journey by land from St. Charles, to Loutre Island.

Saint Louis, formerly called Pain Court, was founded by Pierre La Clede and his associates in 1764, eighty-four years after the establishment of Fort Crevecœur, on the Illinois river. Until a recent period, it was occupied almost exclusively by people of French extraction, who maintained a lucrative traffic with the Indians. The history, and present condition of this important town, are too well known to be dwelt upon in this place. Its population has been rapidly augmented within a few years, by the immigration of numerous families, and its wealth and business extended by the accession of enterprising merchants and mechanics from the Eastern States. As the town advances in importance and magnitude, the manners and customs of the people of the United States, are taking the place of those of the French and Spaniards, whose numbers are proportionably diminishing. As this place seems destined to be the depot for such articles of merchandize, as are to be sent from New Orleans to the upper rivers, it is unfortunate, that no good harbour offers for the protection of boats against the impetuosity of the current, and from the danger occasioned by floating ice. In this respect, the site of a projected town, a few miles below, has a decided advantage over Saint Louis, as it possesses a good harbour. It was selected many years since, by some Canadian Frenchman who formed a settlement there.

The horizontal strata of limestone which underlay the town of Saint Louis and the surrounding country, have strongly attracted the attention of the curious, on account of having been found in one or two instances, to contain distinct impressions of the human foot. There is now in the possession of Mr. Rapp, of the Society of the Harmonites, a stone, which has upon its surface, marks that appear to have been formed by the naked feet of some human being, who was standing upon it while in a plastic state; also an irregular line, apparently traced by a stick or wand, held in the hand of the same person. This stone was taken from the slope of the immediate bank of the Mississippi below the range of the periodical floods. To us there seems nothing inexplicable or difficult to understand in its appearance.

Nothing is more probable, than that impressions of human feet made upon that thin stratum of mud, which was deposited on the shelvings of the rocks, and left naked by the retiring of the waters, may, by the induration of the mud, have been preserved, and at length have acquired the appearance of an impression made immediately upon the limestone. This supposition will be somewhat confirmed, if we examine the mud and slime deposited by the water of the Mississippi, which will be found to consist of such an intimate mixture of clay and lime, as under favourable circumstances, would very readily become indurated. We are not confident that the impressions abovementioned have originated in the manner here supposed, but we cannot by any means adopt the opinion of some, who have considered them as contemporaneous to those casts of submarine animals, which occupy so great a part of the body of the limestone. We have no hesitation in saying, that whatever those impressions may be, if they were produced, as they appear to have been by the agency of human feet, they belong to a period far more recent, than that of the deposition of the limestone on whose surface they are found.

The country about St. Louis, like that in the rear of Fort Chartres, and indeed like the horizontal limestone country generally, abounds in sink holes sometimes of great depth. These are very numerous, from five to seven miles back of the town. They are in the form of vast funnels, having at the surface, a diameter of from twenty to fifty yards. Mr. Say descended into one of these, for the purpose of ascertaining the medium temperature below the surface of the earth. This sink opens at the bottom of a deep ravine. It has two apertures near each other, through which water is admitted, and each large enough to afford passage to the body of a man. Within are two chambers from six to twelve feet in breadth, and thirty-five feet long. At the bottom of the second chamber, is a pool of water rather difficult of access. In this apartment the Mercury stood at 60° Fah.; in a shady part of the ravine about twenty-five feet below the general surface at 75°. The grassy plains to the west of St. Louis, are ornamented with many beautifully flowering herbaceous plants. Among those collected there, Dr. Baldwin observed the aristolochia Sipho, cypripedium spectabile,* lilium catesbeiana, bartsia coccinnea, triosteum perfoliatum, cistus canadensis, clematis viorna, and the tradescantia virginica. The borders of this plain begin to be overrun with a humble growth of black jack and the witch hazle,† it abounds in rivulets, and some excellent springs of water, near one of which was found a new and beautiful species of viburnum. On the western borders of this prairie, are some fine farms. It is here that Mr. John Bradbury, so long and so advantageously known as a botanist, and by his travels into the interior of America, is preparing to erect his habitation. This amiable gentleman lost no opportunity during our stay at St. Louis, to make our residence there agreeable to us. Near the site selected for his house is a mineral spring, whose waters are strongly impregnated with sulphuretted hydrogen gas. Cattle and horses which range here throughout the season, prefer the waters of this spring to those of the creek in whose bed it rises, and may be seen daily coming in great numbers, from distant parts of the prairie, to drink of it.

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* C. parviflorum? † Hamamelis virginica, and quercus nigra.

Tumuli, and other remains of the labours of nations of Indians that inhabited this region many ages since, are remarkably numerous about St. Louis. Those tumuli immediately northward of the town, and within a short distance of it, are twenty-seven in number, of various forms and magnitudes, arranged nearly in a line from north to south. The common form is an oblong square, and they all stand on the second bank of the river. The statement given below of their forms, magnitudes, and relative positions, is the result of actual admeasurement taken with care, and with as much accuracy as their present indefinite boundaries, together with the dense growth of underwood, covering their surface and tending to beguile and obstruct the vision of the observer, will admit.

It seems probable these piles of earth were raised as cemeteries, or they may have supported altars for religious ceremonies. We cannot conceive any useful purpose to which they can have been applicable in war, unless as elevated stations from which to observe the motions of an approaching enemy; but for this purpose a single mound would have been sufficient, and the place chosen, would probably have been different.

Nothing like a ditch, or an embankment, is to be seen about any part of these works.*

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* What we have called *base* in the following statement is in reality the length of a line passing over the top of the mound, from the termination of the base each side.

The numbers refer to a draft. The heights are estimated, with the exception of two.

No. 2. A square with a hollow way, gradually sloping to the top; or, in other words, a hollow square open behind.

Base - - - - - - - -	50 feet,
Height - - - - - - - -	5
Distance N. from the Spanish bastion, -	258

Indian graves are extremely numerous about St. Louis, though none are found in the immediate vicinity of the town:

No. 3. An oblong square.

Longitudinal base,	114 feet,
Transverse do.	50
Length at top,	60
Perpendicular height,	4
Distance from No. 2. N.	115

No. 4. An oblong square.

Longitudinal base,	84 feet,
top,	45
Perpendicular height,	4
Distance N.	251

Nos. 2, 3, & 4, are each about 33 ordinary steps from the edge of the second bank of the river.

No. 5. An oblong square.

Longitudinal base,	81 feet,
top,	35
Perpendicular height	4
Distance W.	155

No. 6. Different in form from the others. It is called the *Falling Garden*, and consists of three stages, all of equal length and of the same parallelogramic form; the superior stage, like the five succeeding mounds, is bounded on the east by the edge of the second bank of the river; the second and third stages are in succession on the declivity of the bank, each being horizontal, and are connected with each other, and with the first, by an abruptly oblique descent.

Longitudinal base,	114 feet,
top,	88
Transverse base of first stage,	30
height of do.	5
Declivity to the second stage,	24
Transverse surface of do.	51
Declivity to the third stage,	20
Tranverse surface of do.	87
Declivity to the natural slope,	19

No. 7. Like the three succeeding ones conical.

Distance northward,	95 feet,
Base,	83
Top,	34
Height,	4 1-2

No. 8.

Distance, about N.	94 feet,
Base,	90
Top,	31
Height,	5

No. 9.

Distance about N.	70
Base,	114
Top,	56
Height,	16

they are most frequent on the hills about the Merameg and on the north side of the Missouri. On the 12th June, Mr. Say and Mr. Peale, accompanied by one man, descended the Mississippi, in a small boat to the mouth of the Merameg,

No. 10.	Distance, about N.	74
	Base,	91
	Top,	34
	Height,	8 or 10
No. 11.	Nearly square, with a large area on the top, (a brick house is erected at the S. W. corner.) The eastern side appears to range with the preceding mounds.	
	Distance,	158 feet,
	Base,	179
	Top,	107
	Height W. side, say	5
	S.	11
	E.	15 or 20
No. 12.	Nearly square, westerly a little, N. from No. 7, and distant from it,	30
	Base,	129
	Top,	50
	Height,	10
No. 13.	A parallelogram placed transversely with respect to the group.	
	Distance,	20 feet,
	Distance from No. 5, N. 10 W.	350
	Longitudinal base,	214
	top,	134
	Transverse base,	188
	top,	97
	Height,	12
No. 14.	A convex mound, W.	55
	Base,	95
	Height,	5 or 6
No. 15.	Together with the three succeeding ones, more or less square.	
	Distance N. W.	117
	Base,	70
	Height,	4
No. 16.	Distance N. 10 E.	103
	Base,	124
No. 17.	Distance N.	78
	Base,	82
No. 18.	Distance, N. N. E.	118
	Base,	77

The mounds from 14 to 18 inclusive, are so arranged as to describe a curve, which, when continued, terminates at the larger mounds, Nos. 15 and 19.

No. 19. A large quadrangular mound, placed transversely, and with No. 13, ranging in a line nearly parallel to the principal series (from 2 to 11.)

and ascended the latter river about fifteen miles, to a place where great numbers of graves have been explored, and have been represented to contain the bones of a diminutive race of men. Most of these graves are found near the bank of the Merameg. They do not rise above the general surface, but their presence is ascertained by the vertical stones which enclose them, and project a little at either end of the grave. When the included earth, and the numerous horizontal flat stones, are removed, we find the sides neatly constructed of long flat stones, vertically implanted and adapted to each other, edge to edge, so as to form a continuous wall. The graves are usually three or four feet, though sometimes six feet in length. The bones they contained appeared to have been deposited

Distance N. N. W. from No. 13.	484 feet,
E. N. E. 18.	70
Base,	187
Top,	68
(by measurement) Height,	23

No. 20. A small barrow, perhaps two feet high, and of proportionably rather large base, say 15 or 20 feet.

No. 21. A mound similar to the preceding, same height. West of No. 16, base 25 feet.

No. 22. Quadrangular, distance West from No. 16	319 feet,
Base,	73

No. 23. A mound of considerable regularity, but owing to the thickness of the bushes, we cannot at present satisfy ourselves of its being artificial, though from its corresponding with No. 25, we suppose it to be so.

No. 24. Appears to be an irregular mound 10 or 12 feet high, and 145 feet base.

No. 25. Distant N. 10 E. 114 feet, and following this course 132 feet, we arrive at an elevation on its margin, as is also the case with No. 24, and which we have numbered 26.

No. 26. Of which the base is 89 feet, and height 10 or 12—it is distant W. N. W. from No. 16, 538 feet.

No. 27. Is the largest mound, of an elongated-oval form, with a large step on the eastern side, distance N. from No. 26.	1463 feet.
Longitudinal base, - - -	319
top, - - - -	136
Transverse base, - - - -	158
top, - - -	11
Step transversely, - -	79
Height by measurement, - -	34

At the distance of a mile to the westward is said to be another large mound.

after having been separated from the flesh, and from each other, according to the custom of some tribes of Indians at the present day.

In the first grave opened by Mr. Say, were found the fragments of an earthen pot, and the bones of an infantine skull; the second contained what appeared to be the remains of a middle aged man of the ordinary stature, laid at full length; the bones much confused and broken. An inhabitant residing here informed them, that many similar graves had been found along the summits of most of the neighbouring hills. In one of these he had found two pieces of earthen ware, one having nearly the form of a porter bottle; the other with a wide mouth; but this grave contained no bones. After spending a night at this place, they crossed the river to the town of Lilliput, (one of the projected towns here has received this name) the place so often mentioned as the locality of the graves of a pigmy race. Appearances here are in general similar to those already described. One head, that had been dug up, was that of an old person, in whom the teeth had been loose, and the alveolæ obliterated, leaving the sharp edge of the jaw bone. From this the neighbouring settlers had inferred the existence of a race of men without teeth, having their jaws like those of the turtle. Having satisfied themselves that all the bones found here were those of men of the common size, Mr. Say and Mr. Peale "sold their skiff, shouldered their guns, bones, spade, &c. and bent their weary steps towards St. Louis, (distant 16 miles) where they arrived at eleven o'clock P. M., having had ample time by the way to indulge sundry reflections on that quality of the mind, either imbibed in the nursery or generated by evil communications, which incites to the love of the marvellous, and by hyperbole, casts the veil of falsehood over the charming features of simple nature."

These graves evidently contain the relics of a more modern people than those who erected the mounds.

On the summit of one of the large hillocks, near St. Louis, (No. 47, described in the foregoing note,) are several of these graves; we opened five of them, but in one only, were we fortunate in finding any thing interesting, and all that this contained, was a solitary tooth, of a species of rat, together with the vertebræ and ribs of a serpent of moderate size, and in good preservation; but whether the animal had been buried by the natives, or had perished there, after having found admittance through some hole, we could not determine. If they were buried by the Indians, they are probably the bones of a species of Crotalus, as it is known that many Indians of the present day have a sort of veneration for animals of that genus. The circumstance of the discovery of these bones renders it somewhat probable, that rattlesnakes were formerly worshipped by the natives of America, and their remains, like those of the Ibis of Egypt, religiously entombed after death.

Whilst we were at Cincinnati, Dr. Drake exhibited to us, in his cabinet of Natural History, two large marine shells, that had been dug out of ancient Indian tumuli in that vicinity. These shells were each cut longitudinally, and the larger half of each only remained. From this circumstance it seems probable that they had been used by the aborigines as drinking cups; or, consecrated to superstition, they may have been regarded as sacred utensils, and either used in connection with the rites of sacrifice, or in making libations to their deities; they may, however, like the Cymbium of the Archipelago, have served a more useful and salutary purpose in bathing.

One of these specimens seems to be a *Cassis cornutus*, of authors, or great conch shell, though it is proper to observe, that of the three revolving bands of tubercles, characteristic of that species, the inferior one in this specimen is double. In length it is about nine inches and a quarter, and in breadth seven inches.

The other specimen is a heterostrophe shell of the genus *Fulgur* of Montfort; and, as far as we can judge, in every respect the same with those which are, at the present day, found on the coast of Georgia and East Florida, known to naturalists, under the name of *F. perversus*, though it is certainly much larger than any of the recent specimens we have seen; its length being nine inches and breadth six and a half.

Several different countries have been mentioned by authors as the habitation of the *cornutus*; according to Rumphius it inhabits Amboyna, the straits of Malacca, and the shores of the island of Boeton; Humphreys says it is brought from the East Indies and China; Linnæus believed it to inhabit the coasts of America; but Bruguiere, a more recent author, informs us that Linnæus was probably mistaken, in the habitation of this shell, and states it to be a native of the Asiatic ocean.

The *cornutus* becomes of some importance in the question relative to the Asiatic origin of the American Indians. All the authorities to which we have been able to refer, correspond in assigning the shores of Asia, or those of the islands which lie near that continent, as the native territory of this great species of conch, with the sole exception of Linnæus; but as no other author has discovered it on the coasts of this continent, we must believe with Bruguiere, that it is only to be found in the Asiatic ocean.

The circumstance then of this shell being discovered in one of the ancient Indian tumuli affords, at least, an evidence that an intercourse formerly existed between the Indians of North America and those of Asia; and leads us to believe that even a limited commerce was carried on between them, as it undoubtedly was with the Atlantic coast, from which the Fulgur was obtained.

But although this isolated fact does not yield a positive proof of the long asserted migration of the ancestors of the present race of American Indians from Asia to this country, yet, when taken in combination with other evidence, which has been collected by various authors, with so much industry it will be regarded as highly corroborative of that popular belief.

In the prairies of Illinois, opposite St. Louis, are numbers of large mounds. We counted seventy-five in the course of a walk of about five miles, which brought us to the hill a few years since occupied by the monks of La Trappe. This enormous mound lies nearly from north to south, but it is so overgrown with bushes and weeds, interlaced with briers and vines, that we were unable to obtain an accurate account of its dimensions.

The survey of these productions of human industry, these monuments without inscription, commemorating the existence of a people once numerous and powerful, but no longer known or remembered, never fails, though often repeated, to produce an impression of sadness. As we stand upon these mouldering piles, many of them now nearly obliterated, we cannot but compare their aspect of decay, with the freshness of the wide field of nature, which we see reviving around us: their insignificance, with the majestic and imperishable features of the landscape. We feel the insignificance and the want of permanence in every thing human; we are reminded of what has been so often said of the pyramids of Egypt, and may with equal propriety be applied to all the works of men, "these monuments must perish, but the grass that grows between their disjointed fragments, shall be renewed from year to year."*

June 21st. After completing our arrangements at St. Louis, we left that place at noon, and at 10 o'clock on the following day, entered the mouth of the Missouri. From St. Louis upward to the Missouri, the water of the Mississippi, for a part of the year, is observed to be clear and of a greenish colour on the Illinois side, while it is turbid and yellow along the western bank. But at the time of our ascent every part of the Mississippi appeared equally turbid, its waters soon becoming blended with the heavy flood of the Missouri.

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* Maturin.

The Missouri being now swollen by the spring floods, which had subsided in the Mississippi, entered that river with such impetuosity, as apparently to displace almost the whole body of the waters in its channel. We had occasion to observe that the water of the Missouri, passes under that of the Mississippi, rising and becoming mingled with it on the opposite shore, so that a portion of the clear, green waters of the latter river, run for some distance in the middle of the channel, and along the surface of the Missouri waters, rendered perhaps specifically heavier, by the great quantities of earthy matter mingled with them. The waters of the Missouri are so charged with mud and sand, as to be absolutely opake, and of a clay colour; while those of the Mississippi being comparatively clear, and having a somewhat olivaceous tint, afford an opportunity of tracing their respective courses, after their junction in the same channel. At some stages of water they run side by side, and in a great measure unmingled, as far as Herculaneum, forty-eight miles below their confluence.

We had the pleasure to find, notwithstanding the furnace was supplied with wood of an indifferent quality, that the force of our steam engine was sufficient to propel the boat against the current of the Missouri, without recourse to the aid of the *cordelle*, which we had expected to find necessary.

We were somewhat surprised to see here, a flock of black-headed terns. It is remarkable that these birds, whose ordinary range is in the immediate vicinity of the sea coast, should ascend this river to so great a distance. They are not seen on the Delaware as high as Philadelphia, unless driven up by storms.

In ascending from the mouth of the Missouri to Bellefontain, a distance of four miles, our boat grounded twice on the point of the same sand bar, and considerable time was consumed in efforts to get her afloat. A military post was established at Bellefontain, under the direction of the government of the United States, by general Wilkinson, in 1805; but the soil on which his works were erected has disappeared, the place being now occupied by the bed of the river. A few fruit trees only, which stood in the end of his garden, are yet standing, but are now on the brink of the river. The first bank is here ten or twelve feet high, rising perpendicularly from the water. Near its base are the trunks of several trees with one end imbedded, and the other projecting horizontally over the surface of the water, affording an evidence of the recent deposition of the soil of the low plains, and an admonition of the uncertainty of tenure, on the first bank of the river. One of these projecting trunks is still in good preservation. It is about three feet in diameter, and from its direction must pass immediately under the roots of two large trees, now occupying the surface of the soil.* Similar appearances are frequent along the Mississippi and Missouri, and furnish abundant evidence that these rivers are constantly changing their bed, and, from the great rapidity of the stream, as well as from the appearances presented, we must suppose these changes are not very slowly produced; but their range is confined to the valley, within the second banks, which are here raised about seventy feet. On this second bank, in the rear of the site of the former works, the buildings belonging to the present military establishment have been erected. They were commenced in 1810. The houses are of one story, constructed of logs, based upon masonry, and united in the form of a hollow square. At the foot of the second bank rises a fine spring of water, which has given name to the place. Cold Water creek, a very small stream not navigable, discharges itself a few hundred yards above; in times of high water its mouth might afford harbour to small boats. Before the recent change in the bed of the Missouri, this creek entered higher up than at present, and then afforded a good harbour for boats of all sizes. The fifth regiment were encamped here at the time of our arrival, waiting for the contractor's steam boats, three of which we had passed at the mouth of the river.

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* In a section of forty feet perpendicular, of the alluvion of the Missisippi near New Madrid, Mr. Shultz found seven hundred and ninety-eight layers, indicating an equal number of inundations, in the time of their deposition. Supposing these inundations to have happened yearly, we have an easy method of forming an estimate, of the rapidity of the elevation of the bed of the Missisippi. These layers were found to vary in thickness, from one fourth of an inch to three inches. *See Shultz's Travels*, vol. 2. p. 20.

Here we found it necessary to adjust a tube to the boilers of our steam engine, in order to form a passage, through which the mud might be blown out: the method heretofore adopted, of taking off one end, for the purpose of admitting a man to clean them, proving too tedious, when it was found necessary to repeat the operation daily. The expedient of the tube succeeded to our entire satisfaction.

Dr. Baldwin found here a plant, which he considered as forming a new genus, approaching astragalus; also the new species of rose, pointed out by Mr. Bradbury, and by him called Rosa mutabilis. This last is a very beautiful species, rising sometimes to the height of eight or ten feet. The linden tree[*] attains great magnitude in the low grounds of the Missouri; its flowers were now fully expanded.

In ascending from Bellefontain to Charboniere, where we came to an anchor, on the evening of the 24th, we were opposed by a very strong current, and much impeded by sand-bars. On the upper ends of these sand-bars, are many large rafts of drift wood; these are also frequent along the right hand shore. In several places we observed portions of the bank, in the act of falling or sliding into the river. By this operation, numerous trees, commonly cottonwoods and willows are overturned into the water.

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[*] *Tilia Americana.* The Podalyria alba, anemone virginiana, polygala incarnata. (prairies) anagallis arvensis, lathyrus decaphyllus, ranunculus fluviatalis, carex multiflora, &c. were collected at Bellefontain.

Dr. Baldwin' MS. Notes.

The forests, on the low grounds immediately in the vicinity of the Missouri, are remarkably dense; but in many instances, the young willows and poplars, (which are the first and almost the only trees, that spring up on the lands left naked by the river) have not attained half their ordinary dimensions, before, by another change in the direction of the current, they are undermined and precipitated down, to be borne away by the river. The growth of the cotton tree is very rapid, that of the salix angustata, the most common of the willows found here, is more tardy, as it never attains to great size. The seeds of both these trees are produced in the greatest profusion, and ripened early in the summer, and being furnished by nature, with an apparatus to ensure their wide dissemination they have extended themselves, and taken root in the fertile lands along all the ramifications of the Mississippi, prevailing almost to the exclusion of other trees.

Charboniere is on the right bank of the Missouri. This name was given it by the boatmen, and the earliest settlers, on account of several narrow beds of coal, which appear a few feet from the water's edge, at the base of a high cliff of soft sandstone. The smell of sulphur is very perceptible along the bank of the river, occasioned doubtless, by the decomposition of pyrites, in the exposed parts of the coal beds. Some small masses of sulphate of lime also occur, and have probably derived their origin from the same source.

At St. Charles we were joined by Maj. O'Fallon, agent for Indian affairs in Missouri, and his interpreter, Mr John Dougherty, who had travelled by land from St. Louis. When Lewis and Clark ascended the Missouri, the town of St. Charles was said to contain one hundred houses, the inhabitants deriving their support principally from the Indian trade. This source having in a great measure failed, on account of the disappearance of the aborigines, before the rapid advances of the white population, the town remained in a somewhat declining condition for several years; but as the surrounding country was soon occupied by an agricultural population, a more permanent, though less lucrative exchange is taking the place of the Indian trade. Accordingly within two or three years, many substantial brick buildings had been added, and several were now in progress: we could enumerate, however, only about one hundred houses. There are two brick kilns, a tanyard, and several stores.

A mile or two below St. Charles, are many trunks of trees projecting from the bank, like those mentioned at Bellefontain. In the face of the banks, are usually great numbers of the holes made by the bank-swallow for its nest, and the birds themselves are frequently seen.

At St. Charles, arrangements were made for the purpose of transporting baggage for such of the gentlemen of the party as should choose to ascend the Missouri by land, that they might have the better opportunies for investigating the natural history of the country. Messrs. Say, Jessup, Peale, and Seymour, having provided themselves with a horse and packsaddle, on which they fastened their blankets, a tent, and some provisions, accompanied by one man, left St. Charles at 7 o'clock on the morning of the 26th, intending to keep nearly an equal pace with the steam boat, in order to rejoin it as occasion might require. Dr. Baldwin, still confined by debility and lameness, was compelled to forego the pleasure of accompanying them.

The Western Engineer proceeded on her voyage, soon after the departure of Mr. Say and his detatchment. Having grounded several times in the course of the day, and contending all the way against a heavy current, she proceeded but a few miles. We passed some rocky cliffs; but in general, the immediate banks of the river presented the same appearance as below, consisting of a recent alluvium. After we had anchored at evening, Dr Baldwin was able to walk a short distance on shore, but retured much fatigued by his exertions.*

On the morning of the 27th, after having taken in a small supply of indifferent fuel, we crossed over to the right hand side of the river, and took on board one of the party, who had left the boat at an early hour, to visit a friend residing a short distance from the river. At evening we came to anchor half a mile below point Labidee, a high bluff, where observations for latitude were taken. Here we were detained a day making some necessary repairs.

A fine field of wheat, which appeared to be ripe, extended down to the brink of the river opposite the spot where we lay. This belonged to the plantation of a farmer, recently from Virginia. From him we obtained a plentiful supply of milk, and some bacon hams. A portion of the bank had lately fallen into the river, and with it, a part of the wheat field, and the dwelling house and other buildings seemed destined soon to follow.

The shore here was lined with the common elder, (Sambucus canadensis) in full bloom, and the cleared fields were yellow with the flowers of the common mullien. This plant, supposed to have been originally introduced from Europe, follows closely the footsteps of the whites. The liatris pycnostachia here called "pine of the Prairies," which was new in full bloom, has a roundish tuberous root, of a warm somewhat balsamic taste, and is used by the Indians and others, for the cure of Gonnorhea.

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* The vegetable productions at this place were, the populus deltoides, occupying the narrow margin of the river, (not here preceded by the salix angustata, as is generally the case in recent alluvial grounds on the Ohio and Mississippi,) the amorpha fruticosa,† and platanus occidentalis, next follow. The margin of the bluff produces the quercus rubra, juglans pubescens, carpinus Americana, (around the latter, we observed the celastrus scandens entwined and in fruit,) and on higher grounds, the laurus sassafras and juniperus Virginiana. Of herbaceous plants, the only one in flower was the Rudbeckia *fulgida*. The higher parts of the hills were in many places thickly covered with species of Elymus and Andropogon, the summits being usually quite naked, and consisting of horizontal masses of ferruginous coloured sandstone. *Baldwin.*

† This beautiful flowering shrub occupies the low lands of Georgia, on the sea coast, but is not confined to the margin of rivers, as appears to be the case on the Missouri.

The Indian interpreter Mr. Dougherty also showed us some branches of a shrub, which he said was much used among the natives, in the cure of Lues venerea. They make a decoction of the root, which they continue to drink for some time. It is called "blue wood" by the French,[*] and is the Symphoria racemosa of Pursh, common to the maritime states, the bank of the St. Lawrence, and the Missouri. It is here rather taller, and the branches less flexuous than in the eastern states.[*]

Without meeting any remarkable occurrences, we moved on, from day to day, encountering numerous obstacles in the navigation of the river, and being occasionally delayed, by the failure of some part of the steam engine, till on the 2d of July, we arrived at Loutre Island, where we found Mr. Say and his companions.

After leaving the steam boat at St. Charles, on the 20th of June, this party had travelled over a somewhat hilly country, covered with open oak woods, for about ten miles, to a small creek, called the Darden, entering the Mississippi a few miles above the Illinois. This stream they crossed three miles from the Missouri, having in their walk suffered greatly from thirst. At evening they tied their pack-horse to a bush, and as they returned after being absent a few minutes for water, the animal took fright, and breaking loose, disencumbered himself of his pack, and set off on a gallop to return to St. Charles, and it was not without great exertion that he was overtaken, and brought back. They then pitched their tent, and were so fortunate as to find a house at the distance of half a mile. This belonged to a family from Carolina, and exhibited great appearance of neatness and comfort, but the owner was found particularly deficient in hospitality. He refused to sell, or to give any refreshments for the use of the party, and even granted them some water with apparent reluctance, marching haughtily about his piazza, while some person was annoying his family by playing wretchedly on a flute. Mr. Say and the gentlemen of his party had on the fatigue dress of common soldiers, to which they probably owed the coldness of their reception. We are however glad to be able, from much experience, to say that there are few houses in the lately settled parts of the United States, where common soldiers would have met such a reception, as was accorded by this Mr. N. to the gentlemen of the party. Want of hospitality is rarely the fault of the inhabitants of the remote settlements. Being refused refreshments, they returned to their camp, and with the addition of a hawk which they had killed, made a supper from the contents of their pack.

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[*] Baldwin.

On the 27th they crossed the Perogue, about nineteen miles from St. Charles, and after a fatiguing march of several miles, were entertained at the house of a very worthy man, who supplied them with whatever his place afforded. From too long fasting, and from the effect of exposure, and fatigue, Mr. Say and others became somewhat unwell, and on their account, the party remained at the house of their friendly host till evening, when they walked four miles to a place called Fort Kennedy. They purchased a ham, and a loaf of corn bread of Mr. Kennedy, paying ten cents per pound for the ham, and twenty-five cents for all the bread, milk, and corn consumed during their stay.

The next morning having travelled about seven miles, they halted for breakfast, and having fettered their horse, dismissed him to feed, but when sought for the purpose of continuing their journey, he could not be found. Two travellers at length arrived, and informed them that the horse had been seen at about six miles distance, on the way towards St.

Charles; a horse was therefore hired, and a person returned in pursuit, but he was not to be found, having proceeded on his journey, previously to the arrival of the messenger.

The prairie flies (a species of Tabanus) are exceedingly troublesome to horses and cattle, in so much that people who cross these grassy plains, usually travel very early in the morning, and again at evening, resting greater part of the day; some indeed journey only by night. If they travel at all in the day, they have the precaution to defend the horse, by a covering thrown loosely over him. The Tabani appear about the 10th of June, and are seen in immense numbers, until about the 10th of August, when they disappear. Near the farm houses we observed, that cattle when attacked by them, ran violently among the bushes, to rid themselves of their persecutors.—Mosquitoes were not numerous.

As they were fearful of being unable to overtake the steam boat on the Missouri, if they made a longer delay to prosecute the search for their horse, it was determined to abandon him altogether, rather than return to St. Charles, whither he had doubtless gone; accordingly on the 29th of June, they made a division of their baggage, and each one shouldering his respective portion, proceeded towards the margin of Loutre Prairie. When they arrived here, they determined to take the most direct route towards the Missouri, as it seemed folly for them to attempt, in the drought and heat, which then prevailed, to cross the extensive plains of Loutre, and the grand Prairie with their heavy burthens. They therefore, followed a path leading nearly south, along a naked ridge, where they travelled twelve miles, without finding water, and arrived at Loutre Island in the evening. They were all the day tormented with excessive thirst, and being unaccustomed to travelling on foot, they were much fatigued, and several became lame. The soil of the extensive Prairies which they passed, was not very good, but mixed at the surface, with so much vegetable matter, accumulated by the successive growth, and decomposition of the yearly products, as to give it the aspect of fertility.

On the south side of Loutre Prairie, a well has been sunk, sixty-five feet without obtaining water; on the north, water is readily found, by digging to a moderate depth. Loutre Prairie is twenty-three, and Grand Prairie is twenty-five miles in length: on the borders of each are some scattering settlements.

Near Loutre island are several forts, as they are called by the inhabitants, built by the settlers during the late war, and designed to afford protection, against the attacks of the Aborigines, chiefly the Kickapoos, and Saukees, who were most feared in this quarter. They are simply, strong log houses, with a projecting upper story, and with loop holes for musketry.

It was within a few miles of this place, that a company of mounted rangers, commanded by captain Calloway, were attacked by the Indians. The assault commenced as the rangers were entering a narrow defile, near the confluence of the Prairie-Forks of Loutre Creek. Several men were killed at the first fire, and captain Calloway received in his body a ball, that had passed through his watch. So furious was the onset, that there was no time for reloading their pieces, after they had discharged them. Captain Calloway threw his gun into the creek, that it might not add to the booty of the Indians, and though mortally wounded, drew his knife, and killed two of the assailants, but seeing no prospect of success he ordered a retreat, hoping thereby to save the lives of some of his men. He was the last to leave the ground, when springing into the creek he received a shot in his head, and expired immediately.

Loutre island, is something more than nine miles long, and about one mile wide, and is the residence of several families. Between it, and the main land, is an isthmus which is left naked at times of low water. Loutre creek enters at the lower end of the island. It is not navigable. Mr. Talbut formerly from Kentucky, has been resident here for nine years. His farm is in a high state of cultivation, and furnishes abundant supplies of poultry, eggs, potatoes, and the numerous products of the kitchen garden, of which he sent a handsome present on board our boat. He informed us that peach trees succeed well in the most fertile parts of the island.

The first dwellings constructed by the white settlers, are nearly similar in every part of the United States. Superior wealth and industry are indicated by the number, and magnitude of corn-cribs, smoke houses, and similar appurtenances; but on the Missouri, we rarely meet with any thing occupying the place of the barn in the northern States. The dwellings of people who have emigrated from Virginia, or any of the more southern states, have usually the form of double cabins, or two distinct houses, each containing a single room, and connected to each other by a roof, the intermediate space, which is often equal in area to either of the cabins, being left open at the sides, and having the naked earth for a floor, affords a cool, and airy retreat, where the family will usually be found in the heat of the day. The roof is composed of from three to five logs, laid longitudinally, and extending from end to end of the building; on these are laid the shingles, four or five feet in length; over these are three or four heavy logs, called weight poles, secured at their ends by withes, and by their weight supplying the place of nails.

They have corn mills, consisting of a large horizontal wooden wheel, moved by a horse, and having a band passed round its periphery, to communicate motion to the stone. These are called band mills, and are the most simple, and economical of those in which the power of horses is employed. The solitary planter, who has chosen his place remote from the habitation of any other family, has some times a mill of a more primitive character, called a handmill, probably differing, little from those used among the ancient Egyptime. It consists of two stones, and while one person causes the uppermost to revolve horizontally upon the disk of the other, a second, who is usually a child or a woman, introduces the corn a few grains at a time, through a perforation in the upper stone. Some are content with the still ruder apparatus, consisting of an excavation in the top of a stump, into which the corn is thrown, and brayed with a pestle. This is the method in use among many of the agricultural Indians.

A large species of Lampyris is common on the lower part of the Missouri. It is readily distinguished from the smaller species, the common fire fly, by the mode of coruscating. It emits from three to seven or eight flashes, in rapid succession, then ceases; but shortly after renews its brilliancy. This species appears early in May; we saw many of them in returning by night from the Maramec to St. Louis; but before our arrival at Loutre island they had disappeared, and were succeeded by great numbers of the Lampyris pyralis, whose coruscations are inferior in quantity of light, and appear singly.

The black walnut attains, in the Missouri bottoms, its greatest magnitude. Of one, which grew near Loutre island, there had been made two hundred fence-rails, eleven feet in length, and from four to six inches in thickness. A cotton tree in the same neighbourhood produced thirty thousand shingles, as we were informed by a credible witness.

CHAPTER IV.

Settlement of Cote Sans Dessein—Mouths of the Osage—Manito rocks—Village of Franklin.

The left bank of the Missouri at the confluence of Loutre creek is precipitous, terminating a group of hills which can be distinguished, running far to the north-east. Towards the river, these fall off in perpendicular precipices, whose bases are concealed in a dense growth of trees and underwood. From their summits huge masses of rock have fallen, and some of these are of such magnitude, that their summits rise above the surrounding forest. One standing opposite the head of the Island next above Loutre, is marked with numerous rude drawings, executed by the Indians, some representing men with the heads of bisons, spears, arrows, bows, &c. Half a mile above this rock, the Gasconade enters the Missouri from the south. The sources of this river are in the hilly country, near those of some of the larger tributaries of the Yunger fork of the Osage; its waters are transparent, and its current rapid. Traversing a rocky and broken country, it has not the uniformity of current common to many of the branches of the Missouri, but is varied by numerous cataracts and rapids, affording convenient stations for water-mills. Some saw-mills have already been erected, and from them, a supply of pine timber is brought to the settlements on the Missouri, that tree being rarely met with here, except in the hilly country. The Gasconade is navigable for a few miles. As might be expected a projected town is placed at the confluence of this river, and the Missouri, and is to be called Gasconade.

Above the Gasconade, the aspect of the shores of the Missouri, is the same as below, except that the hills are discontinued on the left side, and make their appearance on the right, extending along eight or nine miles; above this both shores are low bottom grounds.

Having received on board Mr. Say and his companions, we left Loutre island on the 3d of July, and passing in succession the mouths of the Gasconade, Bear Creek, the Au Vase and other tributaries, we anchored on the evening of the 5th, above the little village of Cote Sans Dessein. This place contains about thirty families mostly French, occupying as many small log cabins, scattered remotely along the left bank of the river. Nearly opposite the village is the lower mouth of the Osage. Just above the town is the elevated insular hill, which has given name to the place; it extends about eight hundred yards, parallel to the bank of the river, and terminates at a small stream called Revoe's creek. Back of the hill is a marsh, discharging a small stream of water into the creek. The site of the settlement of Cote Sans Dessein is remarkable on account of the fertility of the soil, the black mould extending to the depth of about four feet. The soil is very rich for twenty or thirty miles, in the rear of the village, but the uncertainty of the titles, arising from the conflicting claims, founded on the basis of pre-emption, New Madrid grants, and the concession of a large tract opposite the mouth of the Osage, made by the Spanish authorities in favre of Mr. Choteau, still operates to retard the increase of population.

At the time of the late war, the inhabitants of this settlement relying on mutual protection, did not retire, but erected two stockades, and block houses for their defence; the Sauks, assisted by some Foxes and Ioways, having by a feigned attack and retreat, induced the greater part of the men to pursue them, gained their rear by means of an ambuscade, and entering the village, raised their war cry at the doors of the cabins. The women and children fled in consternation to the block-houses. At this juncture, a young man was seen, who would not abandon his decrepid mother, even though she entreated him to fly and save his own life, leaving her, who could at best expect to live but a few days, to the mercy of the savages. The youth, instead of listening to her request, raised her upon his shoulders, and ran towards the stockade, closely pursued by the Indians. They fired several times upon him, and he must have been cut off had not a sally been made in his favor.

After killing the villagers who had fallen into their hands, the Indians proceeded to attack the lower stockade. The block-house at this work was defended by two men, and several women. On hearing the war cry, this little but determined garrison responded to it in such a manner as to communicate to the Indians the idea that the block-house contained a considerable number of men. They, therefore, proceeded to the attack with caution. In the first onset, one of the two men received a mortal wound, which made him incapable of further exertion—the other continued to discharge the guns at the besiegers, they being loaded and put into his hands by the women. One mode of attack, adopted by the Indians, had nearly proved successful. They threw burning torches upon the roof, which was several times on fire, but the women, with admirable presence of mind, and undaunted intrepidity, ascended to the top of the building and extinguished the flames. This scene continued during the entire day, and at evening, when the assailants withdrew, a small portion only of the roof remained, so often had the attempt to fire the building been repeated. The loss sustained by the enemy was never correctly ascertained; it has since been stated by an Indian, that fourteen were killed and several wounded, but many are of opinion that two or three only were killed.

We saw the hero of this affair at the block-house itself, now converted into a dwelling, but he did not appear to be greatly esteemed, having perhaps few qualities except personal intrepidity to recommend him. Cote Sans Dessein contains a tavern, a store, a blacksmith's shop, and a billiard table.

The Cane* is no where met with on the Missouri; but its place is in part supplied by the equisetum hiemale, which, remaining green through the winter, affords an indifferent pasturage for horned cattle and horses; to the latter, it often proves deleterious. The inhabitants of St. Genevieve placed their horses upon an island covered with rushes, where great numbers of them shortly after died; but it was observed that such as received regularly a small quantity of salt remained uninjured. Of a large number of horses, placed on an island near the mouth of the Nishnebottona, to feed upon this plant, no less than twenty were found dead at the end of five days. May not the deleterious properties of the equisetum hiemale depend, in some measure, on the frozen water included in the cavity of the stalk?

We were told the cows on this part of the Missouri, at certain seasons of the year, give milk so deleterious, as to prove fatal, when taken into the stomach; and this effect is commonly attributed to a poisonous plant, said to be frequent in the low grounds, where it is eaten by the cattle. They have a disease called the *milk sickness*; it commences with nausea and dizziness, succeded by headache, pain in the stomach and bowels, and finally, by a prostration of strength, which renders the patient unable to stand; a general torpor soon ensues, succeeded by death. It is a common belief that the flesh of animals, that have eaten of this poisonous weed, is noxious, and that horses are destroyed by it.

We have heard it remarked by the inhabitants of the Ohio below the rapids, that the milk of cows running at large in August is poisonous; and this they do not fail to attribute to the effect of noxious plants, and in some places they point out to you one, and in another place, another vegetable, to which they assign these properties. The inhabitants generally seem to have no suspicion that milk, unless it is poisoned, can be an unwholesome article of diet, and we have been often surprised to see it given to those labouring under fever. Throughout the western states, and particularly in the more remote settlements, much use is made of butter milk, and soured milk in various forms; all of which they sell to travellers. Below Cote Sans Dessein we paid, for new milk, twenty-five cents per gallon, and for soured milk, eighteen and three-fourth cents. At that place twenty-five cents per quart were demanded by the French settlers. It is commonly remarked that the French, as well as the Indians, who have been long in the immediate vicinity of the whites, charge a much higher price for any article than the Anglo-Americans, under the same circumstances. Emigrants from the Southern states prefer sour milk, and the traveller's taste in this particular, we have often observed, forms a test to discover whether he is entitled to the opprobrious name of *Yankee*, as the people of the northern and eastern states rarely choose sour milk. We have found that in some of the sickliest parts of the valley of the Mississippi, where bilious and typhoid fevers prevail, through the summer and autumn, the most unrestrained use is made of butter, milk, eggs, and similar articles of diet. Dr. Baldwin was of opinion that the *milk sickness* of the Missouri, did not originate from any deleterious vegetable substance eaten by the cows, but was a species of typhus, produced by putrid exhalations, and perhaps aggravated by an incautious use of a milk diet.

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* Miegia macrosperma of Persoon.

During the few days we remained at Cote Sans Dessein, Dr. Baldwin, though suffering much from weakness, and yielding perceptibly to the progress of a fatal disease, was able to make several excursions on shore. His devotion to a fascinating pursuit, stimulated him to exertions for which the strength of his wasted frame seemed wholly inadequate;

and it is not, perhaps, improbable that his efforts may have somewhat hastened the termination of his life.

Between Loutre island and Cote Sans Dessein, compact limestone occurs, in horizontal strata, along the sides of the Missouri valley. It is of a bluish white colour, compact structure, and a somewhat concoidal fracture, containing few organic remains. It alternates with sandstones, having a silicious cement.* These horizontal strata, are deeply covered

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* From Bay Charles hill, 4 miles below Hannibal, Missouri, we received, through Dr. Sommerville, several organic remains. Among them are the following:

Carbonate of Lime:

One specimen contains exclusive quantities of segments of the Encrinite of small diameter, from 1-4 of an inch down to minute.

Another specimen also with numerous small Encrinites has a very wide and short radiated Productus.

Another specimen a grayish chert, containing cavities formed by the solution and disappearance of encrinites, the parts of these which were originally hollow when in the state of carbonate of lime, being subsequently filled with chert, now show the nature of the fossil, being cylindrical cavities, with a solid centre and transverse partitions—the largest 2-10ths of an inch wide.

From Rector's hill, adjoining the village of Clarksville, Missouri, from Dr. Sommerville's collection:

A specimen of oolite—carbonate of lime.

It is composed of small spherical granules in contact with each other, which, in their fracture, exhibit rather a concentric tendency, with the appearance of a central nucleus; but we could not perceive any decided evidences of former organization in them. Imbedded in the mass are a few columnar segments of encrinites, and a portion of a compressed bivalve, which, in the form of its radiating lines, resembles a pecten.

From Charboniere:

A specimen in argillaceous sandstone of a portion of a leaf like the Nelumbium—It is only the middle portion of the impression of the leaf that remains, being of an oval form of about five inches in greatest diameter, the rest being broken away: the stalk has been broken off at the junction of the leaf.

Productus *spinosus*. Say.

A small species of terebratula, in width two fifths, and in length more than seven-tenths of an inch—an internal cast—individuals very numerous, varying much in size, the smallest being about one-fifth of an inch wide.

From the Mammelles near St Charles:

Productus: a portion of a valve, and smaller portion of the opposite valve of a remarkably large species, of which the proportions may have been not dissimilar to that of the Ency. Meth. pl. 244, fig. 5—the striæ are similar to those of that shell, except in being somewhat smaller, and the groove of one valve, and consequent elevation of the other, not so profound, less abrupt, and more angular in the middle, and with soil, usually a calcareous loam, intermixed with decayed vegetable matter.

July 6th. Soon after leaving the settlement of Cote Sans Dessein we passed the upper and larger mouth of the Osage River. Here, to use the language of the country, a town has been *located*, and the lots lately disposed of at St. Louis at various prices, from fifty to one hundred and eighty dollars each. Within the limits of this town is a considerable hill, rising at the point of the junction of the two rivers, and running parallel to the Missouri. From its summit is an extensive view of the village of Cote Sans Dessein, and the surrounding country.

The river of the Osages, so called from the well known tribe of Indians inhabiting its banks, enters the Missouri one hundred and thirty-three miles above the confluence of the latter river with the Mississippi. Its sources are in the Ozark mountains opposite those of the White River of the Mississippi, and of the Neosho, a tributary of the Arkansa. Flowing along the base of the north-western slope of a mountainous range, it receives from the east several rapid and beautiful rivers, of which the largest is the Yungar, (so named, in some Indian language, from the great number of springs tributary to it,) entering the Osage one hundred and forty miles from the Missouri.

In point of magnitude the Osage ranks nearly with the Cumberland and Tennessee. It has been represented as navigable for six hundred miles, but as its current is known to be rapid, flowing over great numbers of shoals and sandbars, this must be considered an exaggeration. In the lower part of its course it traverses broad and fertile bottom lands, bearing heavy forests of sycamore and cotton trees. We may expect the country along the banks of this river will soon become the seat of a numerous population, as it possesses in

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far less prominent on the edge of the shell. It may justly be named *grandis*, as its hinge width was more than 3 1-2 inches.

a fertile soil and a mild climate, advantages more than sufficient to compensate for the difficulty of access, and other inconveniencies of situation.

The northern bank of the Missouri, for some distance above the confluence of the Osage, is hilly. Moreau's Creek enters three miles above, and at its mouth is Cedar Island, where we anchored for the night. This island is three miles long, and has furnished much cedar timber for the settlements below; but its supply is now nearly exhausted.

In the afternoon of the following day we were entangled among great numbers of *snags* and *planters*, and had a cat head carried away by one of them. In shutting off the steam on this occasion, one of the valves was displaced, and as we were no longer able to confine the steam, the engine became useless, the boat being thus exposed to imminent danger. At length we succeeded in extricating ourselves, and came to an anchor near the entrance of a small stream, called Mast Creek by Lewis and Clark.

At evening dense cumulostratus and cirrostratus clouds skirted the horizon: above these we observed a comet bearing north-west by north. Above the mouth of the Osage, the immediate valley of the Missouri gradually expands, embracing some wide bottoms, in which are many settlements increasing rapidly in the number of inhabitants. The Manito rocks, and some other precipitous cliffs, are the terminations of low ranges of hills running in, quite to the river. These hills sometimes occasion rapids in the river, as in the instance of the Manito rocks, opposite which commences a group of small islands stretching obliquely across the Missouri, and separated by narrow channels, in which the current is stronger than below. Some of these channels we found obstructed by collections of floating trees, which usually accumulate about the heads of islands, and are here called rafts. After increasing to a certain extent, portions of these rafts, becoming loosened, float down the river, sometimes covering nearly its whole surface, and greatly endangering the safety, and impeding the progress of such boats as are ascending. The group above mentioned is called the Thousand Islands.

Nashville, Smithton, Rectorsville, and numerous other towns of similar character and name, containing from one to half a dozen houses each, are to be met with in a few miles above the Little Manito rocks. Almost every settler, who has established himself on the Missouri, is confidently expecting that his farm is, in a few years, to become the seat of wealth and business, and the mart for an extensive district.

The banks of the Missouri, in this part, present an alternation of low alluvial bottoms and rocky cliffs. Roche a Pierce creek is a small stream entering nearly opposite another, called Splice creek, a few miles above the Manito rocks. Here is a range of rocky cliffs, penetrated by numerous cavities and fissures, hence called by the French boatmen, Roche a Pierce, and giving name to the creek. These rocks we found filled with organic remains, chiefly encrinites. About eight or ten miles above this point the Missouri again washes the base of the rocky hills, which bound its immediate valley. The rocks advance boldly to the brink of the river, exhibiting a perpendicular front, variegated with several colours arranged in broad stripes. Here is a fine spring of water gushing out at the base of the precipice; over it are several rude paintings executed by the Indians. These cliffs are called the Big Manito rocks, and appear to have been objects of peculiar veneration with the aborigines, and have accordingly received the name of their Great Spirit.

It is not to be understood that the general surface of the country, of which we are now speaking, is traversed by continuous ridges, which, in their course across the valley of the Missouri, occasion the alternation of hill and plain, which, to a person ascending the river, forms the most conspicuous feature of the country. The immediate valley of the Missouri preserves great uniformity in breadth, and is bounded on both sides by chains of rocky *bluffs* rising from one to two hundred feet above the surface of the included valley, and separating it from those vast woodless plains which overspread so great a part of the country. Meandering from right to left along this valley the river alternately washes the base of the bluffs on either side, while, from a person passing up or down the stream, the heavy forests intercept the view of the bluffs, except at the points where they are thus disclosed. Opposite the Big Manito rocks, and the island of the same name, is the Little Saline river, on the left side; and three or four miles above, on the opposite side, a stream called the Big Manito creek. Here we passed the night of the 12th July. About midnight so violent a storm arose that we were compelled to leave our encampment on shore, the tent being blown down, and to seek shelter on board the boat. Though the storm did not continue long, the water fell to the depth of one inch and an half.

After taking in a supply of wood, we departed on the morning of the 13th, and the same day arrived at Franklin. This town, at present increasing more rapidly than any other on the Missouri, had been commenced but two years and an half before the time of our journey. It then contained about one hundred and twenty log houses of one story, several framed dwellings of two stories, and two of brick, thirteen shops for the sale of merchandise, four taverns, two smiths' shops, two large team mills, two billiard rooms, a court house, a log prison of two stories, a post office, and a printing press issuing a weekly paper. At this time bricks were sold at ten dollars per thousand, corn at twenty-five cents per bushel, wheat one dollar, bacon at twelve and an half cents per pound; uncleared lands from two to ten or fifteen dollars per acre. The price of labour was seventy-five cents per day.

In 1816 thirty families only of whites, were settled on the left side of the Missouri, above Cote Sans Dessein. In three years, their numbers had increased to more than eight hundred families.

The Missouri bottoms about Franklin are wide, and have the same prolific, and inexhaustible soil as those below. The labor of one slave is here reckoned sufficient, for the culture of twenty acres of Indian corn, and produces ordinarily about sixty bushels per acre, at a single crop. In the most fertile parts of Kentucky, fifteen acres of corn are thought to require the labour of one slave, and the crop being less abundant, we may reckon the products of agriculture there, at about one third part less than in the best lands on the Missouri. Franklin is the seat of justice for *Howard* county. It stands on a low and recent alluvial plain, and has behind it, a small stagnant creek. The bed of the river near the shore, has been heretofore obstructed by sand bars, which prevented large boats from approaching the town; whether this evil will increase or diminish, it is not possible to determine, such is the want of stability, in every thing belonging to the channel of the Missouri. It is even doubtful, whether the present site of Franklin, will not at some future day be occupied by the river, which appears to be at this time encroaching on its bank. Similar changes have happened in the short period, since the establishment of the first settlements on the Missouri. The site of St. Anthony, a town which existed about thirteen years since, near Bonhomme, is now occupied by the channel of the river. Opposite Franklin is Boonsville, containing at the time of our visit eight houses, but having in some respects a more advantageous situation, and probably destined to rival, if not surpass its neighbour.

Numerous brine springs are found in the country about Franklin. Boon's Lick, four miles distant, was the earliest settlement in this vicinity, and for some time gave name to the surrounding country. Some furnaces have been erected, and salt is manufactured, in sufficient quantities to supply the neighbouring settlements. Compact limestone appears to be the prevailing rock, but it is well known that coal-beds, and strata of sandstone, occur at a little distance from the river.* We visited one establishment, for the manufacture of salt. The brine is taken from a spring at the surface of the earth, and is not remarkably concentrated, yielding only one bushel of salt to each four hundred and fifty gallons. Eighty bushels are manufactured daily, and require three cords of wood for the evaporation of the water. The furnace consists of a chimney-like funnel, rising obliquely along the side of a hill, instead of the vertical and horizontal flues, commonly used in these manufactories. The fire being kindled in the lower orifice of this, the ascent of the air drives the flame against forty or fifty iron pots, inserted in a double series; to these the water is conveyed by small pipes. The banks of the ravine, in which this spring rises, still retain the traces of those numerous herds of bisons, elk, and other herbivorous animals, which formerly resorted here, for their favourite condiment.

While at Franklin, the gentlemen of the exploring party, received many gratifying attentions, particularly from Gen. T. A. Smith, at whose house they were often hospitably received, and where they all dined by invitation on the 17th of July. Here we met several intelligent inhabitants of the village, and of the surrounding country, from whose conversation we were able to collect much information of the character of the country, and the present condition of the settlements.

Mr. Munroe, a resident of Franklin, related to us that being on a hunting excursion in the year 1816, he remained sometimes on a branch of the Le Mine river, where he found the relics of the encampment of a large party of men, but whether of white troops, or Indian warriors, he could not determine. Not far from this encampment, he observed a recent mound of earth, about eight feet in height, which he was induced to believe must be a cachè, or place of deposit, for the spoils which the party, occupying the encampment, had taken from an enemy, and which they could not remove with them on their departure. He accordingly opened the mound, and was surprised to find in it the body of a white officer, apparently a man of rank, and which had been interred with extraordinary care.

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* In compact limestone, which had been subjected to the action of fire, we observed segments of encrinites becoming easily detached. They were three-fifths of an inch in diameter, varying to the size of fine sand. At Booneville we found a small ostrea and a terebratula, in carbonate of lime.

The body was placed in a sitting posture, upon an Indian rush mat, with its back resting against some logs, placed around it in the manner of a log house, enclosing a space of about three by five feet, and about four feet high, covered at top with a mat similar to that beneath. The clothing was still in sufficient preservation to enable him to distinguish a red coat trimmed with gold lace, golden epaulettes, a spotted buff waistcoat, finished also with gold lace, and pantaloons of white nankeen. On the head was a round beaver hat, and a bamboo walking stick with the initials J. M. C., engraved upon a golden head, reclined against the arm, but was somewhat decayed, where it came in contact with the muscular part of the leg. On raising the hat, it was found the deceased had been hastily scalped.

To what nation this officer belonged, Mr. Munroe could not determine. He observed, however, that the button taken from the shoulder, had the word Philadelphia moulded upon it. The cane still remains in the possession of the narrator, but the button was taken by another of his party.

In relation to this story, Gen. Smith observed, that when he commanded the United States troops in this department, he was informed of an action, that had taken place near the Le Mine, in the Autumn of 1815, between some Spanish dragoons, aided by a few Pawnee Indians, and a war party of Sauks and Foxes. In the course of this action, a Spanish officer had pursued an Indian boy, who was endeavouring to escape, with a musket on his shoulder, but who finding himself nearly overtaken, had discharged the musket behind him at random, and had killed the officer on the spot. The skirmish continuing, the body was captured, and recaptured several times, but at last remained with the Spanish party. This may possibly have been the body discovered by Mr. Munroe, but by whom it was buried in a manner so singular, is unknown.

About the middle of July, the summer freshets in the Missouri began to subside at Franklin. On the 17th the water fell twelve inches, though in the preceding week, more than two inches of rain had fallen. We were informed that the floods had continued longer this year, and had risen higher than usual, owing to the unusual quantities of rain that had fallen.

CHAPTER V.

Death of Dr. Baldwin.—Charaton River, and Settlement.—Pedestrian Journey from Franklin to Fort Osage.

Dr. Baldwin's health had so much declined that, on our arrival at Franklin, he was induced to relinquish the intention of ascending farther with the party. He was removed on shore to the house of Dr. Lowry, intending to remain there until he should recover so much strength as might enable him to return to his family. But the hopes of his friends, even for his partial recovery, were not to be realized. He lingered a few weeks after our departure, and expired on the thirty-first of August. His diary, in which the latest date is the eight of August, only a few days previous to his death, shows with what earnestness, even in the last stages of weakness and disease, his mind was devoted to the pursuit, in which he had so nobly spent the most important part of his life. He has left behind him a name which will long be honoured;—his early death will be regretted not only by those who knew his value as a friend, but by all the lovers of that fascinating science, to which his life was dedicated, and which his labours have so much contributed to advance and embellish. We regret that it is not in our power to add to this inadequate testimony of respect, such notices of the life and writings of Dr. Baldwin, as might be satisfactory to our readers. His manuscripts were numerous, but his works were left unfinished. The remarks on the Rotbollia, published in Silliman's Journal, are his only productions, as far as we are informed, hitherto before the public.* His Herbarium, it is well known, has contributed to enrich the works of Pursh and Nuttall. He was the friend and correspondent of the venerable Muhlenbergh, and contributed materials for the copious catalogue of North American plants, published by that excellent botanist. In South America he met with Bonpland, the illustrious companion of Humboldt, and a friendly correspondence was established between them, which continued until his death. He had travelled extensively, not only in South America, but in Georgia, Florida, and other parts of North America. His notes and collections are extensive and valuable. During the short period of his connection with the exploring party, the infirmities, resulting from a long established and incurable pulmonary disease, then rapidly approaching its fatal termination, could not overcome the activity of his mind, or divert his attention entirely from his favourite pursuit. Though unable to walk on shore, he caused plants to be collected and brought on board the boat; and not disheartened by the many vexations attending this method of examination, he persevered, and in the course of the voyage from Pittsburgh to Franklin, detected and described many new plants, and added many valuable observations relating to such as were before known. To show the scope and accuracy of his method of observation, and for the gratification of the botanical reader, we subjoin a part of the observations registered in Dr. Baldwin's diary, from July fifteenth, the time of our departure from Cote Sans Dessein, to its conclusion. From this the reader will be able to form a satisfactory idea of the vegetable physiognomy of the country on this portion of the banks of the Missouri.*

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* In a letter addressed to Mr. Fraser, an extract from which was published in the tenth volume of the London Journal of Literature and the Arts, Dr. Baldwin mentions having discovered, near Monte Video, in South America, the *Solanum Tuberosum* in its native locality. Mr. Lambert, however, considered this plant as the *Solanum Commersonii* of Dunal, and though it produces tuberous roots, and in other respects makes a near approach to S. tuberosum, he was not satisfied of their identity, and remarks that it is yet to be proved, that this is the stock from which the common potatoe has been derived. It appears, however, that the original locality of the solanum tuberosum has been ascertained by Ruiz and Pavon, after having escaped the observation of Humboldt and Bonpland.

Messrs. Say, Jessup, Seymour, and Dougherty, accompanied by major Biddle, left Franklin on the 19th July, intending to traverse the country by land, to Fort Osage, where they proposed to await the arrival of the steam boat. A pack-horse was purchased for the transportation of their baggage, and a tent, blankets, and provisions, furnished for their accommodation.

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* Above Cote Sans Dessein, we saw frequently the Juglans nigra, and J. pubescens, called white hickory, also a species of Crataegus which, though sometimes seen in Pennsylvania, appears to be hitherto undescribed. Its fruit is large, yellow when ripe, and of an agreeable flavour. On the evening of the eleventh we anchored opposite a steep bank, which I was assisted to climb, but night came on, and put an end to our herbarizations before I had the oppprtunity to collect any thing interesting. The soil here is a dark vegetable mould, at least five feet in depth, and little intermixed with sand. I ascended the same bank on the following morning, but found nothing except a species of Carex, that I do not recollect to have seen before.

After getting under weigh, we passed high calcareous bluffs on the left side of the river, covered with timber, and reminding us of the deep umbrageous forests within the tropics.

Franklin, July 15th. Portulacca sativa, Solanum nigrum, Urtica-pumila, Datura strammonium, and Phytolacca decandra, occur by the road side. Blackberries were now ripe, but not well flavoured. Campanula americana, the large Vernonia mentioned at Cote Sans Dessein, now flowering.

Some plants were brought in, among which we distinguished the Monarda fistulosa, Achillea millefolia, Cacalia atriplicifolia, called "horse mint," Queria canadensis, Menispermum lyonii? Verbena urticifolia. The Annona triloba is frequent about Franklin, also the Laurus benzoin, and the Symphoria now in flower, the Rhus glabrum, Cercis canadensis, Ampelopsis quinquefolia, Eupatorium purpureum, in flower. Cucubalus stellatus, still flowering. The Prickly fruited Æsculus has nearly ripened its nut, Zanthoxylon clava herculis in fruit, a "wild gourd" not in flower.

July 26th. The Gleditschia is a small tree here, Geum album, Myosotis virginiana, Amaranthus hybridus, Erigeron canadense, Solanum Carolinianum, very luxuriant and still flowering. The leaf of the Tilia glabra, I found to measure thirteen inches in length, and eleven in breadth. Bignonia radicans, Dioscorea villosa, a Helianthus with a leaf margined with spines, the narrow leaved Brachystemum, the Liatris pycnostachia, Rudbeckia purpurea, and various others in flower. Juglans porcina, and cinerea, Ostrya virginica, Rhus copallinum. August 4th. Dr. Lowry informed me he has seen Pyrus coronaria, forty feet in height in the forests about Franklin. He showed me a Rudbeckia about three feet high with a cone of dark purple flowers probably a new species.

5th. Eupatorium hieracifolium beginning to flower, Menispermum canadense here called "sarsaparilla," its slender yellow roots being substituted for that article.

6th. A Mimulus is found here resembling M. ringens, but the leaves are not sessile; peduncle very short, flowers large, pink coloured, stem acutely quadrangular, Campanula Americana, three and a half feet high."

The party now remaining on board the steam boat, consisted of major Long, major O'Fallon, Mr. Peale, and lieutenants Graham and Swift. Having completed some repairs of machinery, and other necessary operations, which had occasioned a delay of six days at Franklin, we left that place on the same day, at four o'clock in the afternoon. The inhabitants of the village were assembled on the bank of the river to witness our departure, and signified their good wishes by repeated cheers and acclamations. The fuel we had taken on board, being of an indifferent quality, we were able to make small progress against the rapid current of the Missouri. We anchored, for the night, three miles above Franklin. Finding the valves, and other parts of the steam engine, so much worn by the fine sand, suspended in the water of the river, as to become leaky, we were compelled to lay by, and were occupied for a day in making repairs. In the meantime the boat's crew, were employed in taking on board a supply of dry mulberry wood, which is the best that the forests along the Missouri afford. The water in the river was now subsiding, and the rapidity of the current consequently diminishing; we did not, therefore, so much regret the necessary delays, as we might otherwise have done. Some of the party went out on the south-west side of the river, to search for game. Most of the deer, and larger animals, as well as the turkies, have fled from this part of the country, though it is but a few years since they were extremely abundant; they met however, with a raccoon, the Maryland arctomys, some small birds, and some interesting little animals. After leaving the river bottom, they passed some groves of small and scattered oak trees, and bushes, and arrived at the margin of a wide grassy plain, which spread before them as unvaried, and apparently as boundless as the ocean, and which is said to extend uninterrupted, near three hundred miles to the Arkansa.

At evening a soldier came on board the boat, who had been sent express from colonel Chambers' command. He brought intelligence that the detachment had arrived within fifteen miles of Fort Osage, and that their provisions were nearly exhausted.

Charaton, where we arrived on the 22d, is a small village, its settlement having been commenced in the year 1817. It is, however, in a flourishing condition, and from the advantages of its situation, promises to become one of the most important towns on the Missouri. It does not stand immediately on the bank of the Missouri, but of the Charaton river, about seven hundred yards above its mouth. Charaton will be the depot of merchandise, for a large extent of fertile country, which lies towards the north and east. At this time, the settlement contained about fifty houses, and near five hundred inhabitants, on a spot where two years previous, no permanent habitation had been established. Such is the rapidity, with which the forests of the Missouri are becoming filled with an enterprising and industrious population.

Charaton river is seventy-five yards wide at its mouth, and navigable, at high water, one hundred and fifty miles. Half a mile from its confluence with the Missouri, it receives the Little Charaton, also a considerable stream, and navigable for many miles. The Charaton originates near the De Moyen river of the Mississippi, and traverses a country which is of great importance, both on account of the fertility of its soil, and its inexhaustible mines of coal. The Western Engineer, being the first steam boat that had ever ascended the Missouri, above Charaton, great numbers of the settlers were attracted to the banks of the river, on both sides to witness our progress. So numerous were the obstacles to be encountered, that many were of opinion our progress would soon be arrested. It sometimes happened, that mistaking the channel, we ran our boat aground in shoal places, and in some instances it was necessary to fall back, in order to extricate ourselves from these difficulties. In this way much time was consumed.

The expansions of the Missouri bottom above Franklin have, since their settlement, received distinctive names. We pass on the south the Chney au Barre, Tabeau, Titesaw, and Miami bottoms; on the north, those of Charaton, Sugar tree, and Grand river. These are wide and fertile plains, usually covered with heavy forests of cottonwood, sycamore, ash, and sugar maple, and partly encircled by the bluffs, rising abruptly, about to the elevation of the highest trees, thence sloping gradually to the prairies, the region of the Gramina, and the Cyperaceæ. Eighteen miles above Charaton is the entrance of Grand river, an important tributary to the Missouri, from the north. This river is one hundred and fifty yards wide at its mouth, and is navigable, for boats of small burthen, about two hundred miles. Its waters are transparent, except in times of high floods, and its current less rapid than that of the Missouri. There are no settlements on its banks, except at the mouth where is a trading house, and the residence of a single family. The lands are, however, of a good quality, and the adequate supply of timber, and numerous springs of water, will ensure their speedy settlement. The Sauks, Foxes, and Ioways, hunt in the plains towards the sources of Grand river, where elk, and deer are still numerous, and the latter dispose of their peltries to the traders on the Missouri.

The navigation of the Missouri, for a few miles above and below the mouth of Grand river, is supposed to be more difficult than at almost any other place, owing to the rapidity of the current, and the numerous sand bars and snags. Two miles above the confluence, is the channel called Grand river Cut-Off, so thickly set with snags as to be almost impassable. The distance by the Cut-Off, to the head of the island, is three fourths of a mile; by the course of the river, to the same point, it is six miles. We followed the old channel, which is much obstructed by trunks of trees and sand bars, and after a few hours succeeded in ascending this dangerous pass. Compact limestone, and argillaceous sandstone, occur frequently along the Missouri, above the mouth of Grand river, and indications of coal are often met with. In a country affording but an insufficient supply of timber for the consumption of a dense population, these extensive beds of fossil coal will be considered of great value, and the necessities of the inhabitants will lead to their early exploration. Whenever the dominion of man is sufficiently established in these vast plains, to prevent the annual ravages of fires, trees will spring up; but we may expect that before forests, originating in this manner can arrive at maturity, the population along the banks of the Missouri will become so dense, as to require the greater part of the soil for the purposes of culture.

The beds of coal, in this district, lie horizontally, varying much in thickness, and occuring often at an elevation of a few feet above the surface of the water, in the Missouri.

On the first of August we arrived at Fort Osage, one hundred and five miles above the mouth of Grand river. Here Mr. Say and his party had been some days encamped, having arrived on the 24th July, from their pedestrian journey, across the country from Franklin. After leaving that place on the 19th, they passed through a fine bottom on the left side of the river, closely covered with forests of oaks, elms, hackberry, walnut, the mulberry, the gleditschia, the guilandina and the other trees common on the Missouri, for twelve miles, when they arrived at Arrow Rock, where is a ferry by which they crossed the Missouri. In this walk they passed a field of corn, containing seven hundred acres. The ferry boat used at Arrow Rock is one peculiarly adapted to the navigation of a rapid stream. It consists of two canoes, on which rests a platform, with a slight railing to prevent cattle from falling off.

Arrow Rock is so called from its having been formerly resorted to, by the neighbouring Indians, for the stone used to point their arrows. It is a beautiful situation, and rises to considerable elevation above the water. From its summit is a pleasing view of the river, and near the base is a remarkable eddy, which, as they were crossing, whirled their ferry boat entirely round. On the second day they left their encampment at an early hour, and travelled forward through plains, where very few trees were to be seen. They turned off from the Osage trace, in which they had been travelling, and went eight miles to visit the salt works, and some remarkable diggings, on the saline fork of the Le Mine. Here, at one establishment, one hundred bushels of salt are manufactured per week; eight men are employed, and one hundred and eighty gallons of water are evaporated to produce a bushel of salt.

Two miles from the confluence of the Camp Fork with the Saline, are the salt works, and the residence of Mr. Lockhart, who received the detachment with much hospitality.

His works were not then in operation, but were sufficiently extensive for the manufacture of five hundred bushels of salt per week. Near his house, are the *diggings* so often mentioned in this region as objects of curiosity. These are irregular, but very numerous excavations of little depth, but evidently the result of the united labours of many persons, who were possessed of instruments of iron and steel, as no others could have penetrated, and removed the compact rocky soil, of which the points and brows of the hills are composed. These excavations occur frequently in an extent of two or three miles; and from the amount of labour, which appears to have been expended on them, it has been thought by some, that several hundred men, must have been occupied two or three years in digging them; but this is, doubtless, much overrated. Whoever were the labourers, it is probable their search was for the precious metals, though at present no indications of any metallic ores, except of a little iron, are perceptible about the diggings. Mr. Lockhart had sunk a shaft to the depth of twenty-two feet, but the appearances continued the same as at the surface.

After travelling forty miles from Arrow Rock, for great part of the way through open plains, where the high grass and weeds rendered their progress difficult and laborious, they pitched their tent, on the evening of July 21st, on a branch of the Le Mine. Here they saw four Mississippi kites. The forks of the tail of this bird are so much elongated, as to resemble some fortuitous appendage, for which, at first sight, they are often mistaken. Sandhill cranes, and flocks of prairie hens were also seen, but were so shy as not to be taken without much difficulty.

The country about the Le Mine is beautiful and fertile. The unaccustomed eye, in roving over those extensive undulating prairies, is beguiled by the alternation of forests and meadows, arranged with an appearance of order, as if by the labour of men, and seeks in vain to repose upon some cottage or mansion embosomed in the little copses of trees, or in the edge of the forest, which margins the small streams and ravines in the distance.

Their provisions being nearly exhausted, the detatchment delayed a short time at their encampment on the Le Mine, to replenish their stock by hunting. This camp was near a place called the Grand Pass, a narrow neck of prairie between the timber of the Saline, and that of a small creek discharging directly into the Missouri. Here the Osage trace passes, and a little beyond falls into a waggon road leading to the Tabeau Settlement.

On the 22nd Maj. Biddle experienced a severe attack of cramp in the stomach, but soon found some relief from swallowing a quantity of ginger, the only medicine with which they were provided. On the following day they entered the forests of the Missouri bottom, and soon after crossed the Tabeau, where a town of the same name, at that time containing two houses, had been established. Tabeau is the name of a Canadian hunter, who formerly frequented this region. The creek is navigable to the site of the projected town, about one mile from the Missouri, having for this distance about six feet of water. Four miles from this place they crossed the Little Tabeau, and at evening pitched their tent on a stream called the Little Chneij au Barre, about a mile and an half from the Missouri. Here is a good mill seat. The Great and Little Chneij au Barre are two creeks entering the Missouri about a mile and a half from each other. Before the mouths of these two creeks is a large island, the slough or *Chneij* dividing this island from the shore, received the additional name of Au Barre from a hunter known by that appellation, who was lost here for some time, successively ascending the two creeks, which he mistook for the Missouri; hence the name of Chneij au Barre island, Great and Little Chneij au Barre creek, &c.

In the afternoon they halted to rest at the cabin of a hunter on Fire Prairie creek, so called from the circumstance of three or four Indians having been burned to death by the sudden conflagration of the dry grass in the meadows at its source. Here Mr. Say had an opportunity to examine a young black wolf, which was confined by a chain at the door of the hut. These animals are common in this part of the country. This individual was one of five that had been taken from the same den. It had become familiar with the hunter and his family, but was shy towards strangers. When fed on meat the ferocity of his disposition manifested itself in attempts to bite the children. It was ordinarily fed on bread and milk.

This man had been settled here two years, but had not "made a crop," having subsisted himself and his family by hunting, wherein he had been very successful. In the preceding autumn he had killed seventy deer, and fifty bears. He took great pleasure in relating his hunting adventures, particularly his engagements with bears. One bear, which he had killed, he said, weighed seven hundred pounds; but in this instance he was probably mistaken. He had seen, in the winter of 1818, a large herd of bisons near the Grand Pass; but they had been driven down by the severity of the weather, and were not ordinarily to be found within the limits of his hunting excursions. During the severe wintry weather, he affirmed that bears make for themselves a shelter of brushwood, into which they creep to secure themselves from the cold.

From May until July the female of the common deer conceals her young whilst she goes to feed. It is at this time that the hunters take advantage of the maternal feelings of the animal to secure their prey. They conceal themselves and imitate the cry of the fawn. The solicitude of the parent animal for her young overcomes her usual care for her own safety; and believing she hears the cries of her offspring in distress, she hurries toward the spot where the hunter lies concealed, and falls an easy prey.[*]

Mr. Say and his companions were very politely received

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[*] A variety of this species, the Cervus Virginianus, three specimens of which occurred at Engineer cantonment, had all the feet white near the hoofs, and extending to them on the hind part from a little above the spurious hoofs. This white extremity was divided upon the sides of the foot by the general colour of the leg, which extended down near to the hoof, leaving a white triangle in front, of which the point was elevated rather higher than the spurious hoofs. The black mark upon the lower lip, rather behind the middle of the sides, was strongly noted—

Total length, exclusive of hair, at tip of tail,	ft.	5	4 3-4 in.
Ear, from the upper part of the head,			6 1-2
Tail, from lateral base, exclusive of the hair,			9 1-2
Hind foot, from tip of os calcis to tip of toe,		1	6 1-4
Fore arm,		1	11 7-8

Weight, in February, 115lbs.

This species, common as it is, was never figured, nor indeed very well described, until the year 1819, when it appeared in the valuable work of Messrs. Geoffroy and F. Cuvier (Hist. Nat. des Mammiferes, 2nd liv.)

by Col. Chambers, then at Fort Osage. The rifle regiment was encamped here, waiting the arrival of the contractor's boats.

Fort Osage was established in 1808, by Gov. Lewis. It stands on an elevated bluff, commanding a beautiful view of the river, both above and below. The works are a stockade, of an irregular pentagonal form, with strong log pickets perforated with loop holes; two block houses are placed at opposite angles; one of them, however, flanks one of its curtains too obliquely to be of much service in defending it. There is also a small bastion at a third angle. Within are two series of buildings for quarters, store houses, &c. The position of the fort is not a secure one, on account of numerous ravines and declivities that would cover an enemy within a short distance; but is such that boats ascending or descending the river must be exposed to its fire. The stream in the middle of the river, and on the opposite side, is so remarkably rapid that it is in vain to contend against it with the oar or paddle; it is, therefore, usually necessary for ascending boats to enter the eddy, which brings them within musket shot of the fort.

Its highest northern range is Canada, in North America; and it is found as far south as the river Oronoco, in South America.

This species is leanest in February and March, and in best condition in October and November. The rutting season commences in November, and continues about one month, ceasing generally about the middle o December. During this season the neck of the male becomes much dilated.

The fawn, towards autumn, loses his spots, and the hair becomes grayish, and lengthens in the winter. In this state the deer is said by the hunters to be in *the gray*. This coat is shed in the latter part of May and beginning of June, and is then substituted by the reddish coat. In this state the animal is said to be *in the red*. Towards the last of August the old bucks begin to change to the dark bluish colour; the doe commences this change a week or two later. In this state they are said to be *in the blue*. This coat gradually lengthens until it comes again to the *gray*. The skin is said to be toughest in the *red*, thickest in the *blue*, and thinnest in the *gray*. The blue skin is most valuable.

The horns are cast in January. They lose the velvet the last of September, and beginning of October. About the middle of March, Mr. Peale shot a large doe, in the matrix of which were three perfectly formed young, of the size of a rabbit.

At the time of our journey Fort Osage, which, according to our estimate, is one hundred and forty-two miles, by the course of the river, above Charaton, was the extreme frontier of the settlements. For a great distance below, the establishments of the white settlers were confined to the immediate banks of the Missouri. The inhabitants of this frontier are mostly emigrants from Tennessee, and are hospitable to strangers. Many of them are possessed of considerable wealth. In the inhabitants of the new States and Territories there is a manifest propensity, particularly in the males, to remove westward, for which it is not easy to account. The women, having their attention directed almost exclusively to domestic pursuits, form local attachments, and establish habits, which are not interrupted without occasioning some disquietude. They are at first discontented in their new abode; in a few weeks they become reconciled, but less attached than to their former home; and, at length, by the habit of frequent migration, they acquire the same fondness for an adventurous, unsettled life, as characterises the men.

Daniel Boon, whose history is connected with that of all the new settlements from Kentucky westward, answered to an inquiry concerning the cause of his frequent change of residence, "I think it time to remove when I can no longer fall a tree for fuel, so that its top will lie within a few yards of the door of my cabin." The charms of that mode of life, wherein the artificial wants, and the uneasy restraints inseparable from a crowded population are not known, wherein we feel ourselves dependent immediately and solely on the bounty of nature, and the strength of our own arm, will not be appreciated by those to whom they are known only from description, though they never fail to make an impression upon such as have acquired a knowledge of them from experience. A settler on the Missouri observed to us, that the land he at present occupied was not better than that he had left in Tennessee; but he did not wish to spend all his life in one place, and he had learned, from experience, that a man might live in greater ease and freedom where his neighbours were not very numerous.

A person upwards of sixty years old, who had recently arrived at one of the highest settlements of the Missouri, inquired of us very particularly of the river Platte, and of the quality of the lands about its source. We discovered that he had the most serious intention of removing with his family to that river. On the last day of July and the first of August about two inches of rain fell: the prevailing winds were from the north-east; but the superior strata of the atmosphere carried clouds of different descriptions in different, and sometimes opposite directions. The moon, soon after rising, passed behind a long dense body of cirrus clouds, that floated over the eastern horizon. Long and distinct radii were soon after seen converging to a point fifteen or twenty of the moon's diameters to the eastward of its disk. Such is the refracting power of the aqueous vapors sometimes suspended in the atmosphere.

Horizontal strata of sandstone, and compact limestone, are disclosed in the cliffs on both sides the valley of the Missouri. These rocks contain numerous remains of Caryophilla, Productus, and Terebratulæ.[*]

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[*] From Fort Osage.

Productus spinosus. Say. Longitudinally and transversely subequally striated, the transverse striæ somewhat larger than the others; a few remote short spines, or acute tubercles, on the surface, arising from the longitudinal striæ.

Breadth an inch and a *half*; the striæ are somewhat indistinct—as in No. 5.

Productus incurvus. Say. Shell much compressed; hinge margin nearly rectilinear; surface of the valves longitudinally striated; convex valve longitudinally indented in the middle; the beak prominent and incurved at tip; opposite valve with a longitudinal prominence in the middle; the beak incurved into the hinge beneath the other beak and distant from it.

Width more than 2 2-5 inches—A few univalves also occurred, but they were so extremely imperfect that their genera could not be made out.

Some days passed, after our arrival at Fort Osage, before the weather admitted our making the astronomical observations necessary to ascertain its position. The mean of the results of several observations of the meridian altitude of the sun's lower limb gave 39° 9′ 33 1-2″ north, for the latitude of the place.

A dark coloured carbonate of lime, containing small Terebratulæ like the T. *ovata* of Sowerby, but less than half as long.

No. 1.—A mass of carbonate of lime, containing segments of encrinites in small ossicula.

6.—A Caryophylla of a single star, about 4 inches long, of an irregularly transversely undulated surface, imperfect at each end, but seems to have been attached at base—Near the base it is bent at an angle of about 45 degrees.

Some small and young specimens of the Terebratula, like T. subundata of Sowerby.

Miliolites centralis—*Say.*

12. Astrea. A species of very minute alveoles. From the state of the petrifaction no radii are perceptible, so that the genus is not determinable.

Saltworks near Arrow Rock. Columnar segments of the Encrinus.

Inferior portion of the head of a Pentremes. *Say.*

Segments of the column of an oval encrinus, much narrower in the middle than the oval vertebra of an encrinite represented by Parkinson, Vol. 2. pl. 13. f. 40—resembling those of the genus *Platycrinites* of Miller.

CHAPTER VI.

Mouth of the Konzas—Arrival at Wolf River—Journey by land from Isle au Vache to the village of the Konzas.

Wishing to extend our examinations between Fort Osage and the Konzas river, also between that river and the Platte, a party was detached from the steam boat, with instructions to cross the Konzas, at the Konza village, thence to traverse the country by the nearest route to the Platte, and to descend that river to the Missouri. The party consisted of Mr. Say, to whom the command was entrusted, Messrs. Jessup, Peale and Seymour, Cadet Swift, Mr. J. Dougherty, and five soldiers. They were furnished with three pack-horses, and a supply of provisions for ten days. Thus organized and equipped, they commenced their march on the afternoon of August 6th, accompanied by Maj. Biddle and his servant.

After their departure, the steam boat was delayed a few days at Fort Osage. On the ninth a part of the troops destined for the Missouri service arrived in keel-boats. Col. Chambers, with the principal part of his regiment, were still at Fort Osage, awaiting the arrival of supplies of provisions, now daily expected.

On the following day we resumed our journey, and were accompanied about ten miles by Mr. Sibley, agent of Indian affairs, and his lady, to whom the gentlemen of the party were indebted for numerous hospitable attentions during their stay at Fort Osage; also by captain Bissel, and lieutenant Pentland, of the rifle regiment, who returned in a skiff. Our progress was much impeded by shoals and rapids in the river, but we succeeded in passing these without warping, and anchored at sun-set, having ascended eighteen miles.

Between Fort Osage and the mouth of the Konzas river, a distance of about fifty-two miles, are many rapid places in the Missouri. We were able to ascend all these, except one, without towing. It was with some difficulty we supplied our furnace with wood of a suitable quality. The forests of the Missouri, though limited in extent, are deep and shady, and, though the atmosphere is perceptibly less humid than in the forests of the Mississippi, fallen trees, whose wood is soft and porous like that of the linden and cotton tree, absorb much moisture from the ground. It was only when we were so fortunate as to find a dry mulberry, ash, or cotton-wood still standing, that we could procure fuel well adapted to our purpose. Much time was of necessity expended in cutting and bringing on board our supplies of this article, and the additional delay occasioned by the numerous obstacles to the easy navigation of the river, made our ascent somewhat tedious.

The mouth of the Konzas river was so filled with mud, deposited by the late flood in the Missouri, as scarcely to admit the passage of our boat, though with some difficulty we ascended that river about a mile, and then returning dropped anchor opposite its mouth. The spring freshets subside in the Konzas, the Osage, and all those tributaries that do not derive their sources from the Rocky Mountains, before the Missouri reaches its greatest fulness; consequently the waters of the latter river, charged with mud, flow into the mouths of its tributaries, and there becoming nearly stagnant deposit an extensive accumulation of mud and slime. The Konzas river has a considerable resemblance to the Missouri; but its current is more moderate and the water less turbid, except at times of high floods. Its valley, like that of the Missouri, has a deep and fertile soil, bearing similar forests of cotton-wood, sycamore, &c. interspersed with meadows; but in ascending, trees become more and more scattered, and at length disappear almost entirely, the country, at its sources, being one immense prairie.

We sailed from the mouth of the Konzas on the 13th of August. Numerous sandbars occur in the Missouri above that point, and these occasioned us some delay. The water having fallen several feet, we had less velocity of current to contend against, but found it more necessary to keep in the channel, and could not so often take advantage of the eddy currents, below the points and along the shore.

A party of white hunters were encamped on the Missouri, not far above the Konzas. In the rudeness of their deportment and dress, they appeared to us to surpass the Savages themselves. They are usually the most abandoned and worthless among the whites, who adopt the life of wandering hunters: frequently they are men whose crimes have excluded them from society.

Eighteen miles above the Konzas river, and five above the Little Platte, is a large island, which from its rhombic form, has received the name of Diamond island. The principal channel is on the north side. It is difficult to pass, being much obstructed by sandbars. Four miles above this is a small group, called the Three Islands; and two miles further another cluster, known as the Four Islands, and by the *French* as the Isles des Parcs, or Field Islands. At each of these places, as in the neighbourhood of islands generally, the navigation is difficult.

The site of an old village of the Konzas, and the remains of a fortification erected by the French, were pointed out a few miles below Isle au Vache. This island, which lies about one hundred miles above Fort Osage, was the wintering post of Capt. Martin's detachment, destined to proceed in advance of the troops ordered to the Missouri. Captain Martin, with three companies of the rifle regiment, left Bellefontain in September 1818, and arrived at Isle au

Vache in October, with the expectation of resuming his march, as early in the following spring as the weather would permit. But not having received the necessary supplies of provisions as anticipated, they had been compelled to remain till the time of our arrival, subsisting themselves principally by hunting. Fortunately, this part of the country afforded so much game, that a competent supply was easily obtained. Between two and three thousand deer, beside great numbers of bears, turkies, &c. had been taken. The arrival of the boats, laden with provisions, now furnished them the means of continuing their ascent, and they had the prospect of departing within a few days.

Previous to our departure from Fort Osage, major O'Fallon, the Indian agent who accompanied us, had sent a messenger across the country by land to the Konzas nation of Indians, residing on the Konzas river, summoning their chiefs to a council, to be held at Isle au Vache, on the arrival of the Western Engineer. Agreeably to the message sent by an interpreter, the Indians had been expected on the 18th, but did not arrive until the 23d of August, having been absent, when the messenger reached their village, on a hunting excursion. As soon as they received the invitation they repaired, with all convenient speed, to the appointed place, having sent runners before, to apprise us of their approach.

The interpreter, who returned with them, brought intelligence of the safe arrival of Mr. Say and his party, and of their kind reception at the Konza village. We were sorry to learn that Mr. Say had been in ill health, and had not entirely recovered.

On the 24th, the chiefs and principal men of the Konzas, to the number of one hundred and fifty, assembled under an arbour prepared for their reception. The Indian agent addressed them in a speech adapted to the occasion, setting forth the causes of complaint, which they had given by their repeated insults and depredations upon the whites, giving them notice of the approach of a military force, of sufficient strength to chastise their insolence, and advising them to seize the present opportunity of averting the vengeance they deserved, by proper concessions, and by their future good behaviour, to conciliate those, whose friendship they would have so much occasion to desire.

The replies of the chiefs were simple and short, expressive of their conviction of the justice of the complaints made against them, and of their acquiescence in the terms of reconciliation proposed by the agent. There were present at this council, one hundred and sixty-one Konzas, including chiefs and warriors, and thirteen Osages. The most distinguished men were Na-he-da-ba, or *Long Neck*, one of the principal chiefs. Ka-he-ga-wa-ta-ning-ga, *Little Chief*, second in rank. Shon-ga-ne-ga, who had been one of the principal chiefs, but had resigned his authority in favor of Ka-he-ga-wa-ta-ning-ga. Wa-ha-che-ra, *Big Knife*, a partizan or leader of war parties. Wom-pa-wa-ra, *He who scares all men*, more commonly known to the whites as Plume Blanche, or White Plume, a man rising rapidly in importance, and apparently destined to become the leader of the nation. In addition to the Indians, the officers of the garrison, and a few gentlemen were present at the council. The ceremonies were commenced by a discharge of ordnance from the steam boat; the flags were hoisted in their appropriate places, a council flag being placed near the chair occupied by the agent. The Indians appeared gratified at the displays made on the occasion, but their attention was more particularly aroused by the exhibition of a few rockets and shells, fired for their entertainment. At our departure, which, on account of the Indians, was delayed until the 25th of August, many of them were present, and manifested some surprise at witnessing the operations of the steam boat.

It was thought adviseable to make some addition to our force at Isle au Vache, as we should soon be in advance of the troops on the Missouri, and might be exposed to insults and depredations, from some of the numerous tribes of Indians. Accordingly, on application to colonel Morgan, a boat and fifteen men, under the command of lieutenant Fields, were detailed for this duty, and directed to regulate their movements agreeably to the orders of the commanding officer of the exploring expedition. These men were furnished with provisions for sixty days, and having embarked on board a keel boat, called the Gen. Smith, they sailed in company with the Western Engineer. A favourable wind springing up, we proceeded in the course of the day about twenty-three miles, and encamped at night near the entrance of a small stream called Independence Creek. A little above, and on the south side of the river, is the site of an old Konza town, called formerly the village of the Twenty Four. Above Cow Island the Missouri is more serpentine in direction than below, and the difficulties of the navigation we found by no means diminished as we ascended. The bed of the river, in many places, is broad, and the water distributed into small channels separated by sandbars. About fifty miles above Cow Island we passed a spot that had lately been occupied as a hunting camp by captain Martin, who had been here to procure the requisite provisions for the subsistence of his party.

At the Yellow Banks we found the bluffs elevated about one hundred and fifty feet above the surface of the valley. Barometric observations, several times repeated, gave nearly the same result at some points below. One hundred and fifty feet may, therefore, be assumed as the medium depth of the immediate valley of the Missouri; its aggregate width, for the first five hundred miles above the Mississippi, may be estimated at about three miles. The corresponding appearances in the strata of the opposite sides of this valley, as well as its entire form and character, indicate it to have been formed by the river. But far more than that vast body of soil and of rocky strata which formerly filled the space now occupied by the immediate valley of the river, has been removed by the Missouri. From the summit of the bluffs there is a sloping ascent towards the interior of the country, and it is probable the aggregate elevation of the great plains, is not less than three hundred feet above the surface of the river. If we admit that this great valley, with its numerous ramifications, has resulted from the operation of currents, wearing down, and transporting to the ocean the solid materials of the earth's surface, it would appear necessary still farther to acknowledge that this channel was once much deeper than at present, for we usually meet with thick alluvial depositions covering the rocks that line the bottom of the Missouri valley. The manifest tendency of the operation of the Mississippi, at this time, upon its valley, is to fill up rather than to excavate; but it may be doubted whether this is equally, or even to any degree, the case with the Missouri. The aggregate mass of alluvion within the valley of the Missouri is, undoubtedly, moving downwards, with considerable rapidity, for the quantity of earthy matter carried into the Mississippi is, at all times, very great. In their descent the alluvial substances are alternately deposited and swept away, as by the variations in the direction of the current any particular point is, from time to time, either exposed to, or sheltered from, the action of the stream.

About eighty-seven miles above Cow Island is the mouth of the Nodowa, a river of some importance, being about seventy yards wide, and navigable to some distance. It is not usually seen in passing, being concealed by the island called the Great Nodowa, which is about five miles long, and covered with heavy forests. The lands on the Nodowa are of an excellent quality.

On the 1st of September, we were under the necessity of remaining encamped near the mouth of Wolf river, that some repairs might be made to the steam engine. Here we sent out some persons to hunt, who after a short time returned, having taken a deer, a turkey, and three swarms of bees, which afforded us about half a barrel of honey. On the trees which margin the river, we frequently observed a fine species of squirrel, which possesses all the graceful activity of the common grey squirrel, as it leaps from bough to bough.* After our machinery was adjusted, we resumed our ascent, and had proceeded a short distance, when we were hailed from shore by Mr. Dougherty, who had accompanied Mr. Say's party across the country. We were not a little surprised at this unexpected meeting, and were apprehensive some disaster had befallen the detachment.

Mr. Dougherty being received on board, informed us that Mr. Peale, Mr. Swift, Mr. Seymour, Chaboneau the Indian interpreter, and one of the soldiers were at a little distance in the rear, having accompanied him across the country, from Cow Island, where they had arrived five days after our departure. Mr. Say, and Mr. Jessup had been left sick at Cow Island. We encamped immediately, to give those, who were near, an opportunity of joining us. It will now be necessary to return to the time of Mr. Say's departure from Fort Osage, and briefly to trace the progress of his detachment to the place where a rencontre with a war party of Pawnees, frustrated their design, and made it necessary for them to rejoin the steam boat.

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* *Sciurus macrourus. Say.* *Body* above each side, mixed gray and black, fur plumbeous, black at base, then pale cinnamon, then black, then cinereous, with a long black tip; *ears* bright ferruginous behind, the colour extending to the base of the fur, which, in its winter dress, is prominent beyond the edge; within dull ferruginous, the fur slightly tipped with black; *side of the head and orbits* pale ferruginous, cheek under the eye and ear dusky; *whiskers* black, in about five series, of which the four inferior ones are more distinct, hairs a little flattened; mouth margined with black; *teeth* reddish yellow; *head* beneath, neck and *feet* above pale ferruginous; *belly* paler, fur pale plumbeous at base; *palms* black; *toes*, anterior ones four, the thumb tubercle not longer than its lobe in the palm, and furnished with a broad flat nail; posterior toes five; *tail* beneath bright ferruginous, the colour extending to the base of the fur, with a submarginal black line; above mixed ferruginous and black; fur within pale cinnamon, with the base and three bands black; tip ferruginous.

From nose to tip of tail (exclusive of the hair) 1 foot 7 1-4 inches.
Tail, from base to tip ditto 9 1-10
Ear, from head to tip 3-4

The most common species of squirrel on the banks of the Missouri river. It is allied to *S. cinereus*, but cannot be considered as a variety of that species; neither does it approach any of the numerous varieties of the very variable *S. capistratus* of Bosc.

The fur of the back in the summer dress is from 3-5 to 7-10 of an inch long; but in the winter dress the longest hairs of the middle of the back are 1 inch and 3-4 in length. This difference in the length of the hairs, combined with a greater portion of fat, gives to the whole animal a thicker and shorter appearance; but the colours continue the same, and it is only in this latter season that the ears are fringed, which is the necessary consequence of the elongation of the hair. This species was not an unfrequent article of food at our frugal yet social meals at Engineer Cantonment, and we could always immediately distinguish the bones from those of other animals, by their remarkably red colour.

The tail is even more voluminous than that of the *S. cinereus.*

It seems to approach the *Sc. rufiventer.* Geoff. v. Dict. *D.* Hist. Nat. article Ecu.—p. 104.

Mr. Say's detachment consisting of twelve men and a boy, furnished with three pack horses for the transportation of baggage, departed from Fort Osage on the evening of August 6th. Their route lay westward across the woodless plains, about the sources of the Hay Cabin, Blue Water, and Warreruza Creek. The cliffs along the Blue Water are naked perpendicular rocks. In the vallies numerous Indian encampments occurred, which appeared not long since to have been occupied. These were most frequently seen at the points, where the streams making almost a complete circuit, and nearly enclosing a small tract of ground, afforded an important protection against the approach of an enemy. The prairies about the head waters of the Warreruza abound in game. Here ravens were first seen by the party, and numbers of large banded rattle-snakes were killed. The blowing flies swarmed in inconceivable numbers, attacking not only the provision of the party, but depositing their eggs upon the blankets, clothing, and even on the furniture of the horses. On the 11th of August they arrived at some elevated ridges, from which they overlooked an extensive country, and could trace the whole course of the Wahrengeho, or Full Creek, diverging slightly from the Konzas, and could readily perceive timber upon several of its head branches. The lands between the head waters of Full Creek, and the Konzas are not so good as those about the sources of the Warreruza, and produce less timber. The settlement of this region, will be much retarded on account of the want of trees, these being confined to the margins of the water courses, while tracts of valuable soil, of many miles in extent, have not a single tree or bush upon them. The soil is, however, well adapted to the culture of some of our most valuable forest trees. The sugar maple, and several of the most important species of carya, the oaks, the tulip tree, and the linden, would unquestionably succeed.

In consequence of the excessive heat of the weather, the great fatigues of the party, and their constant exposure in the open plains, the health of several of them began to be impaired. The high and coarse grasses which now covered the plains greatly impeded their progress, and very rapidly destroyed their clothing and mockasins. Their journey was, therefore, slow and laborious. On the night of the 13th they encamped on the bank of the Konzas, having travelled some distance parallel to the course of that river. The next day several of the party, already much debilitated, began to be afflicted with dysentery; some accidents also occured to retard their progress, and on that and the following day they advanced only two miles. On the 16th they marched about fifteen miles, and encamped on the bank of the Konzas. Being now in doubt, as to the situation of the Konza village, and the illness of some of the party continuing, they determined to remain encamped, while some persons should be sent out to reconnoitre the country, and discover, if possible, whether that part of the river, at which they had arrived, was above or below the village they designed to visit. The Konzas river in this part bears the closest resemblance to the Missouri, both in the turbulence and rapidity of its current, and the aspect of the country along its banks; it is, however, so shoal as at almost any point to admit of being forded without difficulty.

Willow islands, moving sandbars, and *falling-in* banks, are as frequent as in the Missouri. The line of forest which skirts the banks, including the bed of the river, is about half a mile wide, but not entirely uninterrupted. The course of the river is remarkably serpentine, forming woodland points alternately on both sides.

After crossing, and recrossing the river, and extending their search in every direction, they had the satisfaction at last to fall in with a beaten path, leading up the river, and which their guide and interpreter was confident would conduct them to the Konza village.

On the morning of the 19th, they passed across a wide and fertile prairie to the Vermillion, a stream which enters the Konzas from the north-west. It is four feet deep, and about twenty yards wide. Here they halted in the middle of the day, and dined on the flesh of a black wolf, the only game they were able to procure.

About Vermillion Creek are some open forests of oak, not extending far on either side. The trees are from fifteen to twenty-five feet high, and from one foot to eighteen inches in diameter, standing at a considerable distance from each other.

On the day following, the Konza village was descried at a distance. The detachment immediately halted to arrange their dress, and inspect their fire arms. This was thought the more necessary, as no party of whites had visited the village since a number of the Konzas had received a whipping at Isle au Vache, and it was a matter of doubt, whether the party would meet a friendly reception.

As they approached the village, they perceived the tops of the lodges red with the crowds of natives; the chiefs and warriors came rushing out on horseback, painted and decorated, and followed by great numbers on foot. Mr. Say and his party were received with the utmost cordiality, and conducted into the village by the chiefs, who went before and on each side, to protect them from the encroachments of the crowd. On entering the village the crowd readily gave way before the party, but followed them into the lodge assigned to them, and completely and most densely filled the spacious apartment, with the exception only of a small space opposite to the entrance, where the party seated themselves on the beds, still protected from the pressure of the crowd by the chiefs, who took their seats on the ground immediately before them. After the ceremony of smoking with the latter, the object which the party had in view in passing through their territories was explained to them, and seemed to be perfectly satisfactory. At the lodge of the principal chief, they were regaled with jerked bison meat, and boiled corn, and were afterwards invited to six feasts in immediate succession. Chaboneau and the old Frenchman, who had been despatched from Fort Osage, to summon the Konzas to meet the agent at Isle au Vache, had arrived some days previous; but the nation being at that time absent on a hunting excursion, the interpreters, after reaching the village, had proceeded immediately into the plains in pursuit of them. At the time of the arrival of our detachment, the village was in confusion, the hunters having lately returned, and being then engaged in preparations for the journey to Isle au Vache. Two runners mere despatched to give notice to major O'Fallon, that his summons had been received; and at the same time the chiefs and principal warriors departed for the place appointed. Before his departure, the principal chief was careful to appoint a fit person to attend Mr. Say's party, and arrangements were made to promote their comfort and convenience, while they should remain at the village.

Many reports had been circulated among the Konzas, respecting the invitation to council their chiefs had received. They were conscious of having recently offended, by firing on major O'Fallon, and by insulting and plundering several soldiers of captain Murtin's command. For these offences they had been in some measure punished at the time, major O'Fallon having returned their fire from his boat, and not entirely without effect, as was supposed; several also had been flogged by the orders of captain Martin, yet they did not consider themselves secure from the vengeance of the whites. Many believed that at the time of the anticipated council, barrels of gunpowder were to be placed in the earth to destroy them at once. The two runners, who had been despatched, quarrelled before they had gone far; one saying all the things that had been told them by the interpreters were lies, for which assertion he was struck to the ground by his companion. In this situation they were found by the advancing chiefs. Finally a dispute happened between the chiefs themselves, respecting rank, in consequence of which ten or twelve of them returned to the village.

Mr. Say, who spent some time among the Konzas, gives, in his notes, the following account of that nation.

"The approach to the village is over a fine level prairie of considerable extent; passing which, you ascend an abrupt bank of the height of ten feet, to a second level, on which the village is situate in the distance, within about 1-4 of a mile of the river. It consists of about 120 lodges, placed as closely together as convenient, and destitute of any regularity of arrangement. The ground area of each lodge is circular, and is excavated to the depth of from one to three feet, and the general form of the exterior may be denominated hemispheric.

"The lodge, in which we reside, is larger than any other in the town, and being that of the grand chief, it serves as a council house for the nation. The roof is supported by two series of pillars, or rough vertical posts, forked at top for the reception of the transverse connecting pieces of each series; twelve of these pillars form the outer series, placed in a circle; and eight longer ones, the inner series, also describing a circle; the outer wall, of rude frame work, placed at a proper distance from the exterior series of pillars, is five or six feet high. Poles, as thick as the leg at base, rest with their butts upon the wall, extending on the cross pieces, which are upheld by the pillars of the two series, and are of sufficient length to reach nearly to the summit. These poles are very numerous, and, agreeably to the position which we have indicated, they are placed all round in a radiating manner, and support the roof like rafters. Across these are laid long and slender sticks or twigs, attached parallel to each other by means of bark cord; these are covered by mats made of long grass, or reeds, or with the bark of trees; the whole is then covered completely over with earth, which, near the ground, is banked up to the eaves. A hole is permitted to remain in the middle of the roof to give exit to the smoke. Around the walls of the interior, a continuous series of mats are suspended; these are of neat workmanship, composed of a soft reed, united by bark cord, in straight or undulated lines, between which, lines of black paint sometimes occur. The bedsteads are elevated to the height of a common seat from the ground, and are about six feet wide; they extend in an uninterrupted line around three-fourths of the circumference of the apartment, and are formed in the simplest manner of numerous sticks, or slender pieces of wood resting at their ends on cross pieces, which are supported by short notched or forked posts, driven into the ground; bison skins supply them with a comfortable bedding. Several medicine or mystic bags are carefully attached to the mats of the wall, these are cylindrical, and neatly bound up; several reeds are usually placed upon them, and a human scalp serves for their fringe and tassels. Of their contents we know nothing.

"The fireplace is a simple shallow cavity, in the centre of the apartment, with an upright and a projecting arm for the support of the culinary apparatus. The latter is very simple in kind, and limited in quantity, consisting of a brass kettle, an iron pot, and wooden bowls and spoons; each person, male as well as female, carries a large knife in the girdle of the breech cloth behind, which is used at their meals, and sometimes for self-defence. During our stay with these In-dinner they ate four or five times each day, invariably supplying us with the best pieces, or choicest parts, before they attempted to taste the food themselves.

"They commonly placed before us a sort of soup composed of maize of the present season, of that description which, having undergone a certain preparation, is appropriately named sweet corn, boiled in water, and enriched with a few slices of bison meat, grease, and some beans, and to suit it to our palates, it was generally seasoned with rock salt, which is procured near the Arkansa river.

"This mixture constituted an agreeable food; it was served up to us in large wooden bowls, which were placed on bison robes or mats, on the ground; as many of us as could conveniently eat from one bowl sat round it, each in as easy a position as he could contrive, and in common we partook of its contents by means of large spoons made of bison horn. We were sometimes supplied with uncooked dried meat of the bison, also a very agreeable food, and to our taste and reminiscence, far preferable to the flesh of the domestic ox. Another very acceptable dish was called *lyed corn*; this is maize of the preceding season shelled from the cob, and first boiled for a short time in a ley of wood ashes until the hard skin, which invests the grains, is separated from them; the whole is then poured into a basket, which is repeatedly dipped into clean water until the ley and skins are removed; the remainder is then boiled in water until so soft as to be edible. They also make much use of maize roasted on the cob, of boiled pumpkins, of muskmelons, and watermelons, but the latter are generally pulled from the vine before they are completely ripe.

"Ca-ega-wa-tan-ninga, or the Fool Chief, is the hereditary principal chief, but he possesses nothing like monarchical authority, maintaining his distinction only by his bravery and good conduct. There are ten or twelve inferior chieftains, or persons who aspire to such dignity, but these do not appear to command any great respect from the people. Civil as well as military distinction arises from bravery or generosity. Controversies are decided amongst themselves; they do not appeal to their chief, excepting for counsel. They will not marry any of their kindred, however remote. The females, before marriage, labour in the fields, and serve their parents, carry wood and water, and attend to the culinary duties; when the eldest daughter marries, she commands the lodge, the mother and all the sisters; the latter are to be also the wives of the same individual. When a young man wishes to marry a particular female, his father gives a feast to a few persons, generally old men, and acquaints them with his design; they repair to the girl, who generally feigns an unwillingness to marry, and urges such reasons as her poverty, youth, &c.—the old men are often obliged to return six or seven times before they can effect their object—when her consent is obtained, the parents of the young man take two or three blankets and some meat to the parents of the female that they may feast, and immediately return to their lodge. The parents put on the meat to cook, and place the same quantity of meat and merchandise on two horses, and dress their daughter in the best garments they can afford; she mounts one of the horses, and leads the other, and is preceded by a crier announcing, with a loud voice, the marriage of the young couple, naming them, to the people; in this way she goes to the habitation of her husband, whose parents take from her every thing she brings, strip her entirely naked, dress her again in clothes as good as she brought, furnish her with two other horses, with meat and merchandise, and she returns with her crier to her parents. These two horses she retains as her own, together with all the articles she brings back with her. Her parents then make a feast, to which they invite the husband, his parents and friends; the young couple are seated together, and all then partake of the good cheer, after which the father of the girl makes a hamony, in which he informs the young man that he must now assume the command of the lodge and of every thing belonging to him and his daughter. All the merchandise which the female returned with is distributed in presents from herself to the kindred of her husband in their first visit. The husband then invites the relatives of his wife to a feast. Whatever peltries the father possesses are at the disposal of the son to trade with on his own account; and in every respect the parents, in many instances, become subservient to the young man.

"After the death of the husband the widow scarifies herself, rubs her person with clay, and becomes negligent of her dress until the expiration of a year, when the eldest brother of the deceased takes her to wife without any ceremony, considers her children as his own, and takes her and them to his house; if the deceased left no brother, she marries whom she pleases. They have, in some instances, four or five wives; but these are mostly sisters; if they marry into two families the wives do not harmonize well together, and give the husband much inquietude; there is, however, no restriction in this respect, except in the prudence of the husband. The grandfather and grandmother are very fond of their grandchildren, but these have very little respect for them. The female children respect and obey their parents; but the males are very disobedient, and the more obstinate they are and the less readily they comply with the commands of their parents, the more the latter seem to be pleased, saying 'he will be a brave man, a great warrior, he will not be controlled.'

"The attachment of fraternity is as strong, if not stronger, than with us. The niece has great deference for the uncle. The female calls her mother's sister *mother*, and her mother's brother *uncle*. The male calls his father's brother *father*, his father's sister *aunt*, his mother's sister *mother*, and his mother's brother *uncle*. Thirteen children have occurred in one family. A woman had three children at a birth, all dead.

"The young men are generally coupled out as friends; the tie is very permanent, and continues often through their life.

"They bear sickness and pain with great fortitude, seldom uttering a complaint; bystanders sympathize with them, and try every means to relieve them. Insanity is unknown; the blind are taken care of by their friends and the nation generally, and are well dressed and fed. Drunkenness is rare, and is much ridiculed; a drunken man is said to be bereft of his reason, and is avoided. As to the origin of the nation, their belief is, that the Master of life formed a man, and placed him on the earth; he was solitary and cried to the Master of life for a companion, who sent him down a woman; from the union of these two proceeded a son and daughter, who were married, and built themselves a lodge distant from that of their parents; all the nations proceeded from them, excepting the whites, whose origin they pretend not to know. When a man is killed in battle the thunder is supposed to take him up, they do not know where. In going to battle each man traces an imaginary figure of the thunder on the soil; and he who represents it incorrectly is killed by the thunder. A person saw this thunder one day on the ground, with a beautiful mockasin on each side of it; having much need of a pair, he took them and went his way; but on his return by the same spot the thunder took him off, and he has not been since heard of. They seem to have vague notions of the future state. They think that a brave warrior, or good hunter, will walk in a good path; but a bad man or coward will find a bad path. Thinking the deceased has far to travel they bury with his body, mockasins, some articles of food, &c. to support him on the journey. Many persons, they believe, have become reanimated, who had been, during their apparent death, in strange villages; but as the inhabitants used them ill they returned. They say they have never seen the Master of Life; they therefore cannot pretend to personify him; but they have often heard him speak in the thunder; they wear often a shell which is in honour of him, but they do not pretend that it resembles him, or has any thing in common with his form, appearance, or dimensions.

This nation having been at profound peace with the Osages since the year 1806, (see Pike, p. 144) have intermarried freely with them, so that in stature, features and customs they are more and more closely approaching that people. They are large and symmetrically well formed, with the usual high cheek bones, the nose more or less aquiline, colour reddish copper, the hair black and straight. Their women are small and homely, with broad faces. We saw but a single squaw in the village who had any pretensions to beauty; she was recently married to an enterprising warrior, who arrived at a feast, apparently in order to exhibit his prize to us. The ordinary dress of the men is a breech cloth of blue or red cloth, secured in its place by a girdle; a pair of leggins, made of dressed deer skin, concealing the legs excepting a small portion of the upper part of the thighs; a pair of mockasins made of dressed deer, elk, or bison skin, not ornamented; and a blanket to cover the upper part of the body, which is thrown over one arm in hot weather, leaving that part naked; or it is even entirely thrown aside. The outer cartilage of the ear is cut through in three places, and upon the rims, thus separated, various ornaments are suspended, such as wampum, string beads, silver or tin trinkets, &c. The hair of most of their chiefs and warriors is scrupulously removed from the head, being careful however to leave enough, as in honour they are bound tacitly to supply their enemy with a scalp in case they should be vanquished. This residuum consists of a portion on the back of the head, of about the breadth of the hand, rounded at its upper termination near the top of the head, the sides rectilinear, and nearly parallel, though slightly approaching each other towards the origin of the neck, where it is abruptly terminated; on the exterior margins, the hair is somewhat longer and erect; this strip of hair is variously decorated; it is sometimes coloured on the margin with vermillion, sometimes a tail feather of the war eagle is attached transversely with respect to the head; this feather is white at base, and black at tip; but the principal ornament, which appears to be worn by some of their chief warriors, and which is at the same time by far the most handsome, is the tail of the common deer; this is attached by the base end to the top of this patch of hair, the back of it resting on the hair, and the tip extended near the termination of the patch; the bristly hair of the tail is dyed red by a beautiful permanent colour, and parted longitudinally in the middle by a broad silver plate, which is attached at top, and suffered to hang loose. Many of these are worn on different parts of the body. The young boys are entirely naked, with the exception of a girdle generally of cloth, round their protruding abdomens. This part of the body in the children of this nation is remarkably prominent; it is more particularly so when they are very young, but gradually subsides as they advance in age. In hot weather the men, whilst in the villages, generally use fans, with which they cool themselves, when in the shade, and protect their heads from the sun whilst walking out; they are made of the wing or tail of the turkey. The women rarely use them. The dress of the female is composed of a pair of mockasins, leggins of blue or red cloth, with a broad projecting border on the outside, and covering the leg to the knee or a little above; many, however, and perhaps almost a majority of them, do not in summer wear this part of the dress. Around the waist, secured by a belt or cestus, is wrapped a piece of blue cloth, the sides of which meet, or come nearly in contact on the outside of the right thigh, and the whole extends downwards as far as the knee, or to the middle; around the left shoulder is a similar piece of cloth, which is attached, by one of its corners, at the axilla of the right arm and extends downward as far as the waist. This garment is often laid aside, when the body, from the waist upward, is entirely exposed. Their hair is suffered to grow long; it is parted longitudinally on the top of the head, and thrown over the shoulders, the line of separation being coloured with vermilion. The females, like those of other aborigines, cultivate the maize, beans, pumpkins, and water-melons, gather and prepare the two former, when ripe, and pack them away in skins or in caches, for keeping; prepare the flesh of the bison, by drying, for preservation; attend to the cooking; bring wood and water; and in many respects manage the domestic economy, and appear to have over them absolute sway. These duties, as far as we could observe, they not only willingly perform as a mere matter of duty, but they exhibited in their deportment a degree of pride and ambition to acquit themselves well; in this respect resembling a good housewife amongst the civilized fair. Many of them are tattooed.

Both sexes, of all ages, bathe *frequently*, and enter the water indiscriminately. The infant is washed in cold water soon after its birth, and the ablution is *frequently* repeated; the mother also bathes with the same fluid soon after delivery. The infant is tied down to a board, after the manner of many of the Indian tribes.

The chastity of the young females is guarded by the mother with the most scrupulous watchfulness, and a violation of it is a *rare occurrence*, as it renders the individual unfit for the wife of a chief, a brave warrior, or good hunter. To wed her daughter to one of these, each mother is solicitous; as these qualifications offer the same attractions to the Indian mother as *family* and *fortune* exhibit to the civilized parent. In the nation, however, are several courtezans; and during our evening walks we were sure to meet with respectable Indians who thought pimping no disgrace. Sodomy is a crime not uncommonly committed; many of the subjects of it are publicly known, and do not appear to be despised, or to excite disgust; one of them was pointed out to us; he had submitted himself to it, in consequence of a vow he had made to his mystic medicine, which obliged him to change his dress for that of a squaw, to do their work, and to permit his hair to grow. The men carefully pluck from their chins, axilla of the arms, eye brows, and pubis, every hair of beard that presents itself; this is done with a spiral wire, which, when used, is placed with the side upon the part, and the ends are pressed towards each other so as to close the spires upon the hairs, which can then be readily drawn out; this instrument we observed to be an article of dress of the chiefs, who departed to attend the council at the Isle au Vache.

CHAPTER VII.

Further account of the Konza nation—Robbery of Mr. Say's detachment by a war party of Pawnees—Arrival at the Platte.]

The Konza warriors, like those of some others of the Missouri tribes, on their departure on a war excursion, sometimes make vows, binding themselves never to return until they have performed some feat which they mention, such as killing an enemy, striking an enemy's dead body, or stealing a horse. An instance lately occurred, of a warrior who had been long absent under a vow of this sort, and finding it impossible to meet an enemy, and being in a starving condition, he returned to his own village by night, with the determination of accomplishing his vow, by killing and scalping the first person he should meet. This person happened to be the warrior's own mother, but the darkness of the night prevented the discovery until he had accomplished his bloody purpose.

On the 23d of August, Mr. Say's party began to prepare for leaving the Konza village, where they had been treated with much hospitality. They purchased a number of articles for their use on the journey they proposed to take, such as jerked bison meat, pounded maize, bison fat put up like sausages, mockasins, leggings, spoons made of the horn of the bison, two large wooden dishes, &c. They received also an addition to their cavalcade of two horses, one belonging to Maj. O Fallon, and another which they procured from a Frenchman residing in the village.

A Pawnee prisoner, an interesting young man, was brought to them, who said he was desirous to accompany them to his nation, but at the same time, was afraid his people would not recognize him, and would kill him for a Konza. He was promised protection, but at the same time it was remarked to him, that if he should attempt to steal the horses of the party on the way, they would certainly pursue him and take his scalp.

On the 24th, says Mr. Say, having been detained until afternoon in searching for our horses, we departed, accompanied by several Indians, who intended to pass the night with us, and to return to the village the following morning.

Our path led along the margin of Blue Earth creek, a stream of the width of twenty-five yards, and greatest depth of three feet, which discharges into the river a mile or two above the Konza village. The soil supports but a thin growth of grass, and the timber is far from abundant, consisting principally of different sorts of oak, confined to the margin of the creek, its ravines and tributaries. One of our Indian followers, who, although a chief of the extinct Missouri nation, has yet much influence with the Konzas, wished to exchange a horse he had with him, for one of ours, which was evidently a less valuable animal. The reason he assigned, in explanation of his desire, of such an apperently disadvantageous exchange was, that his horse had been presented to him by a person, who, he feared, intended to reclaim him, but that if he should exchange him for another horse, he would be secure in the possession of the individual so obtained, as an Indian will not reclaim a present which is not identically the same he had given. At the distance of seven miles from the village, our party encamped by the side of the creek, in a narrow but beautiful, and level prairie bottom, which was bounded by an abrupt, though verdant, range of bluffs.

Mr. Dougherty and one of the Indians went in quest of game, and having supplied the two remaining Indians with a pipe and tobacco, we were partaking of some refreshment, when one of the party suddenly drew our attention to an extensive cloud of dust, which arose from the plain, and which we soon perceived but partially concealed a body of Indians, who had already approached within a quarter of a mile, and were now running with great swiftness. Our Indian followers now displayed all their activity; the chief seized his gun, and ran towards the advancing multitude to obtain his horse, which he mounted and rode off at full speed, whilst his companion disappeared in the bushes in an instant. This was a sufficient intimation that a hostile party was before us, and a timely admonition of the approaching danger. Our men were therefore drawn up in a line, and all prepared themselves for defence in case of extremity.

The advancing party were armed, decorated and painted for battle, but they manifested, as they rushed up to us, the most pacific deportment, shaking us by the hand, putting their arms about our necks, and raising their hands with the palm towards us, in token of peace. We were not, however, disposed to rely upon these assurances of friendship, being fully aware of the difficulties which their partizans would have to surmount, in checking the inconsiderate prowess of the younger warriors. We now observed some of them seizing our horses, which were staked at some distance: they mounted them and rode swiftly in the direction that the chief had taken, but they soon returned. It soon became necessary to protect our baggage by arranging ourselves around it; still, however, in defiance of our vigilance many of our small articles were stolen. They begged for whiskey and tobacco, and a small portion of the latter was given them. Amidst the confusion arising from the incessant and rapid movements of the Indians, we observed an individual bearing off a small package of very fine pounded meat; I immediately pointed out the circumstance to the partisan, and directed him to recover it and punish the thief; he complied by wrenching the meat from the grasp of the latter, and from that of several others who had been contending for portions of it, placed it beneath his feet, and defended it with his lance; but Chabonneau, to whom the meat belonged, declaring that he had given it to them, they were permitted to retain it. A tent which had been pitched for me in consideration of my illness, and in which my blanket, pistols, together with some small articles had been deposited, was plundered of its contents; it was finally cut down and would have been taken away, had we not made an effort to preserve it. During the whole transaction these warriors, who stood at a short distance, intently watched our movements, as if they were led to believe, from the attitude we assumed, that we would attempt to repel them, even with our inadequate force. No sudden action or motion of any one of the party escaped them, and individuals were frequently observed to draw their arrows, to test the elasticity of their bows. At a critical juncture, a tall and graceful Indian cocked his gun fiercely, and put his war whistle to his mouth, but the signal was not blown. Amongst numerous incidents that occurred during the half hour that we were surrounded by them, an individual attempted to seize a knapsack belonging to one of the soldiers, and immediately under his observation; the latter placed his foot upon the knapsack to detain it, and at the same time prepared his gun as if to shoot the offender, who leaped backward with great agility, and with an ejaculation of pleasure, drew his arrow to the head. The whole party precipitately retreated just as Mr. Dougherty returned from hunting; being briefly informed of the nature of their visit, he called aloud to the fugitives in their own language, but they passed on without heeding him, taking our horses with them. I had by a rough estimate fixed their number at one hundred and forty; they were chiefly armed with the bow and arrow and lance, with the usual accompaniment of tomahawks, war-clubs and knives, together with a few guns. Fortunately no personal indignity was offered us; but we could not repress a sensation of much mortification, at the prospect of a frustration of our enterprise, which now seemed inevitable, and of extreme vexation at the irreparable loss of our horses, which no exertion of ours could have saved: an appeal to arms, except in the last extremity, would have been the height of imprudence, conquest being hopeless and escape almost impossible.

Soon after their departure Mr. Jessup and Chabonneau, set out for the village to procure assistance, for the purpose of removing our camp to that place from which we recommenced our journey at a moment so unpropitious, whilst we busied ourselves in removing the baggage to a situation amongst the neighbouring bushes, which appeared favourable for concealment, and for defence, in case of a night attack, which was confidently anticipated. Several alarms occured during the night, but on the return of day we observed thirty mounted Indians riding swiftly towards us. The chief, who left us so precipitately the preceding evening, on his arrival at the village, hastily assembled a little band of warriors for the purpose of returning immediately to our assistance, and it was he and his party, that we had now the pleasure to greet. They expressed great satisfaction, when they learned that we were all uninjured. After saluting us cordially, they pursued the trail of the Pawnees for some distance, and from the footsteps in the grass, and other appearances, to be duly appreciated only by the eye of an Indian, they estimated the number of the Pawnees at 130. On their return they restored to us some bacon and other articles, which had been carried off by the fugitives, and rejected as not at all to their taste. We were now supplied with a conveyance for ourselves and our baggage, and were conducted back to the village.

The Indians who committed this robbery, were a war party of the Republican Pawnees, and were about one hundred and forty in number. Their nation was at war with the Konzas.

Mr. Say's party were kindly received at the village they had left on the preceding day. In the evening they had retired to rest in the lodge set apart for their accommodation, when they were alarmed by a party of savages, rushing in armed with bows, arrows and lances, shouting and yelling in a most frightful manner. The gentlemen of the party had immediate recourse to their arms, but observing that some squaws, who were in the lodge, appeared unmoved, they began to suspect that no molestation to them was intended. The Indians collected around the fire in the centre of the lodge, yelling incessantly; at length their howlings assumed something of a measured tone, and they began to accompany their voices with a sort of drum and rattles. After singing for some time, one who appeared to be their leader, struck the post over the fire with his lance, and they all began to dance, keeping very exact time with the music. Each warrior had, besides his arms, and rattles made of strings of deer's hoofs, some part of the intestines of an animal inflated, and inclosing a few small stones, which produced a sound like pebbles in a gourd shell. After dancing round the fire for some time, without appearing to notice the strangers, they departed, raising the same wolfish howl, with which they had entered; but their music and their yelling continued to be heard about the village during the night.

This ceremony, called the *dog dance*, was performed by the Konzas for the entertainment of their guests. Mr. Seymour took an opportunity to sketch the attitudes and dresses of the principal figures. See the annexed plate.

Finding it impracticable to obtain horses by purchase, out of their almost exhausted stock of merchandise, to enable them to prosecute their march to Council Bluff, after due deliberation, they saw no alternative, but to endeavour to hire horses on credit, and to make the best of their way for Cow Island, in hopes of meeting the steam boat there. A Frenchman, Mr. Gunville, resident with this nation, agreed to furnish two pack horses, and a saddle horse for Mr. Say, whose state of health would not admit of his continuing the journey on foot. Thus furnished they prepared to depart, and in the meantime two runners were despatched to inform Major Long of their situation by letter.

On the 25th of August, Mr. Say and his party again left the Konza village, accompanied by the French trader, who had furnished them two horses, and by a Missouri Indian; but the last had followed them only a few miles, when he repented of his undertaking and returned.

In pursuing the most direct route from the Konza village to the Missouri, they crossed at the distance of seventeen miles, the Vermillion, a small stream bordered with hardwood forests. Nineteen miles beyond this they arrived at the sources of Grasshopper creek, where they encamped on the evening of the 26th. Here the soil changes somewhat abruptly. The high prairies about the Vermillion and Blue Earth creeks are barren, almost naked, and furnished by some orbicular tumuli. About Grasshopper creek the soil is fertile, the grass dense and luxuriant.

On the 27th they arrived at Isle au Vache, and were hospitably received by Col. Morgan and the officers of his command, but had the mortification to learn that Major Long, after waiting a sufficient time to enable the Indian agent to complete his negotiations with the Konzas, had departed with the steam boat before the arrival of the messengers, that had been sent to notify him of their situation. These runners had been despatched immediately after their arrival, with instructions to overtake the steam boat, and to deliver Mr. Say's letter, but after some days they returned, without having been able to effect any thing.

It was now determined that Mr. Say and Mr. Jessup, who on account of ill health, were unable to travel farther on foot, should for the present remain at Isle au Vache, while the other gentlemen of the detachment, should continue their journey. Mr. Dougherty, from his intimate acquaintance with the country, was of opinion that by crossing in the nearest direction from Isle au Vache to the mouth of Wolf river, they might yet overtake the steam boat. They accordingly placed themselves under his guidance, and by great exertion, fortunately arrived at the mouth of Wolf river, on the evening of the 1st of September, as the steam boat was passing.

The country southwest of the Missouri, between the Konzas and the Platte, is drained principally by Wolf river and the Great Nemahaw. These rivers, like the Nodawa and Nishnabotona, which enter the Missouri nearly opposite them, from the northeast, rise in the prairies at an elevation probably of forty or fifty feet above the level of the Missouri. As they descend, their vallies becoming gradually wider, embosom a few trees, and at length, near their entrance into the Missouri valley, are forests of considerable extent. The surface of these prairies presents a constant succession of small rounded hills, becoming larger and more abrupt, as you approach the beds of the rivers. The soil is deep, reposing usually on horizontal beds of argillaceous sandstone, and secondary limestone. In all the limestones along the Missouri, we observe a tendency to crystalline structure, and they have often a reddish or yellowish white colour. There is however always something in the arrangement and in the aspect of the crystals, to distinguish these sparry varieties from the primitive granular limestone, to which they have something of general resemblance. The horizontal disposition of the strata of this limestone, the great numbers of organic relics contained in it, and its intimate connexion with coal strata, indicate with sufficient clearness its relation to the secondary rocks. No person who shall examine this stratum with the least attention either about the Nemahaw and the Konzas,

branches, with pinnated or many-parted leaves. Trees of the family of the conifers are not of frequent occurrence on the Missouri. About the summits of rocky cliffs are here and there a few cedars or junipers, the only trees that retain their verdure during the winter.

The prairies, for many miles on each side of the Missouri, produce abundance of good pasturage; but as far as our observation has extended, the best soil is a margin from ten to twelve miles in breadth, along the western bank of the river. In the summer very little water is to be found in the prairies, all the smaller streams failing, even though the season be not unusually dry. On account of the want of wood and of water, the settlements will be, for a long time, confined to the immediate vallies of the Missouri, the Konzas, and the larger rivers; but it is probable, forests will hereafter be cultivated in these vast woodless regions, which now form so great a proportion of the country; and wells may be made to supply the deficiency of running water.

We have seen at Bellefontain, as well as at several other points on this river, a pretty species of sparrow, which is altogether new to us,* and several specimens of a serpent

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of [illegible]. It is [illegible] stated and [illegible] and in Canada, where it is called by the French Chicot, or stump tree, from the nakedness of its appearance in winter. In the English gardens, where it has been [illegible] under the name of the Hardy Bonduc, it has attained considerable magnitude, but has not [illegible] perfect [illegible].

* *Fringilla grammaca*, Say. Above [illegible] brown [illegible] a [illegible] white line from the angle of the mouth [illegible] the superior mandible, enclosed, as well as the eye, by a dilated white line [illegible]

have occurred, which has considerable [illegible] with the pha-[illegible] of the Southern States or [illegible] of [illegible].*

[illegible] length, [illegible] near their bases, [illegible] brown [illegible] *tail feathers* twelve, blackish brown, two intermediate ones immaculate, adjoining ones with a small white [illegible], which, on the lateral ones, increases in size until on the exterior one it occupies half of the whole length of the feather; the exterior web of the outer feather is white [illegible] [illegible] [illegible] and [illegible] white [illegible] [illegible] of the middle one slightly dilated on the inner side.

[illegible] sex [illegible].

Shot at Bellefontaine on the Missouri. Many specimens were observed. The [illegible] of the [illegible] are yellowish brown. They rest upon the ground like a bird [illegible] a tree, and [illegible]. They were subsequently observed at Engineer cantonment.

* *Coluber obsoletus*. Say. Body black above, beneath whitish with large subquadrate black spots, which are confluent and pale brown towards the tail; throat and neck pure white; skin between the scales with [illegible].

Description. Body black, anterior half with a series of continuous dilated and large [illegible] upon the skin between the scales, on the sides, on many of the scales, are white marginal dashes near their bases; these whites are placed in groups each side of the vertebra of the anterior moiety of the large [illegible] [illegible] [illegible] the [illegible] [illegible] large as [illegible] each side, white, slightly tinged with yellow and red, [illegible] with black points, and spotted with large oblong quadrate spots, which gradually become more [illegible], confluent and [illegible] towards the tail, occupying nearly the whole surface; head beneath and throat pure white; posterior canthus of the eye [illegible], [illegible] [illegible] [illegible] black, enclosed by a silvery line.

One specimen, Pl. 228—Sc. 87
Another do. do. [illegible]—do. [illegible]
Another do. do. [illegible]—do. [illegible]
Total length—4 feet 11 5-8 inches.
Tail do. do. 10 1-8 do.

The lateral red marks are not perceptible unless the skin be stretched so as to separate the scales, and the small white marginal lines on the bases of some of the scales are observable only on close inspection. It varies in being nearly or quite destitute of spots on the anterior portion of the body beneath, but the posterior half of the inferior surface still remains [illegible]. This [illegible] [illegible] [illegible] resemblance to *C.* [illegible], but the scales are [illegible] [illegible], [illegible] the number of its plates and scales approach it still more closely to that uncertain species *C.* [illegible]. It is not an uncommon species on the Missouri from the vicinity of Isle au Vache to Council Bluff.

Penis terminated by a hemisphere, covered with compressed, white spines, which are reflected at tip the [illegible] [illegible] on the posterior side of the member by a canal; it is much dilated, dark reddish brown, [illegible] [illegible] [illegible] the [illegible] side, [illegible] with a [illegible] [illegible] on the middle of the [illegible] [illegible] length one inch and a quarter, width about seven-sixteenths of an inch.

Having received on board the detachment that had arrived from the Konzas village, except Messrs. Say and Jessup, who, on account of ill health, remained at Isle au Vache, we left the mouth of Wolf River on the 2nd of September. A party of hunters, furnished with a horse for the transportation of game, were despatched at the same time with instructions to hunt on the north side of the river, and to join us again in the evening. We had little difficulty in procuring a constant supply of venison. Deer are very numerous on this part of the Missouri, and we had several opportunities to kill them from on board, as they were swimming across the river.

Twenty-seven miles above the mouth of Wolf River, and on the same side, is the confluence of the Grand Nemahaw, a considerable river, which rises in the plains between the Platte and the Republican Fork of the Konzas river, and running eastwardly about one hundred and fifty miles, discharges into the Missouri, a little north of latitude forty degrees. In the straightness of its course, the rapidity and turbulence of its current, it has a general resemblance to the other western tributaries of the Missouri. A few miles above the Nemahaw, and on the opposite side is the mouth of the Tarkio a smaller stream.

On the 4th of September we were joined by the hunters, who brought two deer, and informed us they had killed several others. Lieutenant Field's boat was allowed to remain at the encampment of the preceding night, after the departure of the steam boat, for the purpose of taking on board a large quantity of honey. Swarms of bees were found here in great numbers, and the honey they afforded made a valuable addition to our provisions, consisting now in a great measure of hunters' fare.

Finding one of the valves of the steam engine much worn and leaky, we were now under the necessity of stopping for a day to have a new one, which we had brought, adapted to its place. Several of the men were constantly employed in hunting and fishing. We had now a plentiful supply of game, and some large catfish were taken, some of them weighing more than fifty pounds.

We passed in succession the mouths of the Nishnebottona, and the Little Nemahaw, and arrived on the 7th at the Grand Pass. Here the Nishnebottona, a beautiful river about eighty yards wide, approaches within one hundred and fifty yards of the Missouri, being separated from it by a narrow prairie, rising scarcely twenty feet above the surface of the water. After pursuing for a short distance a parallel course, the two rivers diverge, and the Nishnebottona meanders along the side of the Missouri valley about twenty miles, to its confluence with the latter river. From this point is a pleasing view of the hills called the Bald Pated Prairie, stretching along the north-eastern side of the Nishnebottona, and diminished to the size of ant-hills in the distant perspective. Here the navigation is much obstructed by sandbars, and the ordinary current of the Missouri, according to the observations of Lewis and Clark, corroborated by our observation, is something more than one fathom per second.* In many places the Missouri hurries across concealed sandbars and other obstructions, with the velocity of seven, eight or even twelve feet in a second.† Between these obstructions, the channel becomes deeper, and the current there moderate; consequently the aggregate velocity in times of low water may be reckoned something less than six feet to the second. As the volume of water is increased by the heavy rains, and

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[*] Lewis and Clark, p. 22. vol. i.

[†] This velocity of current is equalled by that of the Cassiquiare in South America, and probably surpassed by the Orinoco, the average descent of whose bed is thirteen inches to the mile (1000 toises, 13 feet 4. 376 inches per toise.) See Humb. Pers. Nar. vol. 5, p. 637, and vol. 4, p. 462. La Condamine and major Rennel estimate the mean descent of the Amazon and the Ganges, scarce four or five inches to the mile, which is a little superior to that of the Mississippi, according to the most satisfactory estimates we [illegible]

the melting of the snows within the Rocky Mountains, the current is proportionably accelerated, and becomes more equable, running for many miles in succession, not less than seven hundred and twenty feet per minute. At the time of our ascent the summer floods had not entirely subsided, and in contending against the current we found occasion in a few instances to make use of the towing rope.

About thirteen miles above the Grand Pass is a point where Lewis and Clark witnessed the falling of a portion, about three-fourths of a mile in length, of a high cliff of sandstone and clay. Appearances have considerably changed since the time of their journey. There is still an indentation along the bluff, marking the upper part of the portion which had slid down, but the whole is now covered with grass. The river has retired from the base of the cliff it was then undermining. A grassy plain, of some extent, occupies the spot where the bed of the river must have been; but this prairie is, in its turn, experiencing the vicissitudes incident to every thing along the bank of the Missouri, and is evidently very soon to disappear entirely. A mile or two above this point are cliffs of sandstone and indurated clay, now in a state of rapid disintegration. Here we observed successive beds of aluminous earth, of a dark gray colour, alternating with red and yellowish white sandstone. Here are also numerous vegetable remains, which Mr. Say thought to consist of the limbs of trees included in the rock, carbonized, and often incrusted with pyrites; smaller branches and short fragments lay intermixed, and crossing each other in every direction.

Among other things, we observed here what appeared to be the cast of the seed vessel of the nelumbium, or of the common magnolia. Fragments of mineral coal were observed scattered about the surface.

The mouth of the Platte, where we arrived on the 15th of September, is, according to our observations, in latitude 41° 3′ 13″ north. We shall hereafter have occasion to speak more particularly of this river. Its mouth now exhibited a great extent of naked sandbars, the water, which was transparent and of a greenish colour, flowing almost unseen through a number of small channels. Masses of sand accumulate at the mouth of the Platte, rendering the navigation of the Missouri at that point extremely difficult. The Platte, during its floods, pours into the Missouri a volume of water, considerably exceeding in magnitude that of the latter river, occasioning a reflux of its waters for many miles. From the Platte upward, the annual range from high to low water in the Missouri, may be rated at about eighteen feet.

Above the Platte, the scenery of the Missouri becomes much more interesting. The bluffs on each side are more elevated and abrupt, and being absolutely naked, rising into conic points, split by innumerable ravines, they have an imposing resemblance to groups of high granitic mountains, seen at a distance. The forests within the valley, are of small extent, interspersed with wide meadows covered with Carices and Cyperaceæ, with some species of Limnetis, Polypogon, and Arundo, sometimes sinking into marshes occupied by Saggittaria, Alismas, and others of the Hydrocharidæ. The woodlands here, as on the whole of the Missouri below, are filled with great numbers of pea vines,* which afford an excellent pasturage for horses and cattle. The roots of the Apios tuberosa were much sought after, and eaten by the soldiers, who accompanied us in our ascent. They are little tubers about half an inch in diameter, and when boiled are very agreeable to the taste. Two and an half miles above the mouth of the Platte, and on the same side, is that of the Papilion, a stream of considerable length, but discharging little water. Here we found two boats belonging to the Indian traders at St. Louis. They had passed us some days before, and were to remain for the winter at the mouth of the Papillion, to trade with the Otoes, Missouries, and other Indians.

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* Species of *Apios*, the Glycine of Lin.

The banks of the Missouri above the Platte, have long been frequented by the Indians, either as places of permanent or occasional residence. Deserted encampments are often seen. On the northeast side, near the mouth of Mosquito river, are the remains of an old Ioway village. Four miles above, and on the opposite side, was formerly a village of the Otoes. On the 19th September, we arrived at the trading establishment of the Missouri fur company, known as Fort Lisa, and occupied by Mr. Manuel Lisa, one of the most active persons engaged in the Missouri fur trade. We were received by a salute from this establishment, and encamped a little above, on the same side of the river.

CHAPTER VIII.

Winter Cantonment near Council Bluff—Councils with the Otoes, Missouries, Ioways, Pawnees, &c.

THE position selected for the establishment of winter quarters for the exploring party, was on the west bank of the Missouri, about half a mile above Fort Lisa, five miles below Council Bluff, and three miles above the mouth of Boyer's river. At this place we anchored on the 19th September, and in a few days, had made great progress in cutting timber, quarrying stone, and other preparations for the construction of quarters.

Cliffs of sparry limestone rise in the rear of the site we had selected, to an elevation of near three hundred feet.* At times of low water, strata of horizontal sandstone, are disclosed in the bed of the Missouri. These pass under and support the limestone. Both these strata probably extend in connexion, some distance to the west; but as they are deeply covered with soil, we could not accurately ascertain their boundary in that direction. On the map accompanying the second volume of this work, we have traced a line running from the Canadian river of the Arkansa, to the Elk Horn, between 96° and 98° west longitude, and marking what we supposed nearly the westernmost limit of the horizontal limestones, and the argillaceous sandstones, disclosed in the beds of the larger rivers.

Both these strata, embrace numerous relicks of marine animals, many of which we collected.†

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* Height of the bluff ascertained by Lieut. Graham:

Trigonometrically, . . .	271 feet.
Barometrically, ...	277

† We add some notices of a few of the most important.

1. Terebratula.—A specimen considerably resembling the T. *subunda-*

Immediately after our arrival, an interpreter had been sent across the country, to intercept the traders, then on their way to the Pawnees, with considerable quantities of merchandise. It was thought proper to suspend all inter-

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ta of Sowerby, in the undulation of the edges of the valves; but it is a much more depressed shell, and of a much less rounded form.

In the young state, the undulation of the edge is not very distinct, but this character increases with age, so that in the young state, it appears like a totally different species from the adult.

2. In the same rock are very numerous separated spines, like those of fish, some of them 1 1-2 inches long.

3. A fragment of a Terebratula or Productus, imbedded, with very long spines, which may possibly be the same with the above.

4. A specimen being a mass of comminuted fragments of shells, amongst which are only recognisable a few segments of the columns of the Encrinus, and minute turretted univalves of five whorls, which resemble Turritella, and are about one-twentieth of an inch long.

5. Millepora cylindrica? Say. Branched, cylindrical; pores very irregular, alternate, oval, placed nearer to each other than the length of their own transverse diameters, and resembling those of an *Alveolite*.

Diameter about one-tenth of an inch.

6. Segments of the columns of Encrinus of authors, of a pentangular form.

7. Columns of the body of a crinoid animal of the analogous species to No. 21.

8. Fragment of a Fern.

9. A mass of argillaceous sandstone, containing spines of a Linnæan Echinus, belonging probably to the genus Cidarites of Lamarck. Of these spines some are elongate-conic, others slightly fusiform, obtuse and slightly dilated near the tip; both are armed with short asperities throughout their length. They resemble in some degree those of the Cidarites pistillaris of Lamarck, but they are smaller, less fusiform, and the asperities are not so prominent.

In the same mass are segments of Encrinus, and fragments of the Retepora.

10. Retepora, much resembling the *Milleporites retiformis* of Martin, Petrif. Derb. pl. 45. fig. 1 and 2., but the divisions in our specimens are rather smaller.

11. Millepora cylindrica. Say. Of the diameter of half an inch.

12. Productus *subcoronatus*. Say. Shell transverse, convex valve semicircular, destitute of asperities or striæ, longitudinally indented in the middle; line of the hinge rectilinear, half as long again as the length of the shell, with three or four spines or serratures on each side towards the angle; umbo not prominent, the beak hardly prominent beyond the line of the hinge. Length, more than three-tenths; breadth, more than one half an inch. A large specimen was four-fifths of an inch wide.

If we except the beak, the outline of this shell as respects the hinge margin and the sides, considerably resembles that of P. spinulosus of Sowerby, but the base is far more obtusely rounded, and it is a shorter shell comparatively with its width. The serratures are very often broken off.

course with those Indians, until an adjustment of the recent difficulties should take place. In addition to the outrage committed on Mr. Say's party, they had made prisoners of two white hunters from the Arkansa, a father and son, who

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The curvature of the beaks, does not in the slightest degree project beyond the angles of the hinge line.

13. An imperfect cast, very like the Terebratula subundata of Sowerby, and of equal magnitude.

14. Pentagonal columns of the trunk of Encrinus of authors, which in outline, may be compared to figs. 41 and 42, of plate 13, vol. 2, of Parkinson's Organic Remains, but their surfaces do not now exhibit any sculpture.

Many of these shells exhibit the most unequivocal evidences of having been in a plastic state, at some period or other, since their deposition in their present situations. The fine striæ of a Productus *[illegible]*, are so interrupted on the middle of a valve of one of our specimens, as at once to convince every observer, of the shell having been then partially dissolved, and when in this state, to have been gently rubbed by some other body, in two directions proceeding obliquely to the same point, so as to throw the striæ in that part, entirely out of their proper longitudinal direction. It is very common to find shells, unnaturally flattened or compressed in various ways and degrees, often without any fracture in the shell or cast; a circumstance which certainly could never happen to the shell, unless it was in a plastic state, or in a state of partial solution.

16. A specimen of carbonate of lime, on its surface a series of sub-parallel tubes, connected by short lateral processes. The whole much resembles, and is probably congeneric with the Erismatholithus tubiporites, (catenatus) of Martin's Petrif. Derb. t. 42, fig. 2., but the connecting processes of the tubes, are much shorter than they are represented in that figure; but it corresponds much more exactly with the tubiporite, figured by Parkinson in his Organic *Remains*, vol. 2, pl. 1. f. 1., and may with great propriety, form a new genus, the type of which will be the Tubipora Strues of Lin.

The genus is probably allied to Favosites and Tubipora.

17. Trilobites. The abdomen of a species of this singular genus, frequently occurs in the limestone of the Missouri; near Engineer Cantonment they were very common. The largest was rather more than one inch long, by about 1 3-10 inches in breadth at base, but the more general length is about three-fourths of an inch. The tergum or intermediate lobe is narrow, being not more than two-thirds of the width of the flanks, and much more convex than those parts.

But a single specimen occurred which we can, without any doubt, consider as the thorax of a Trilobite; but whether or not it appertains to the same species with the above, or to some other of which we have no other fragment, we are at a loss to determine. Like the abovementioned abdomen, it is distinct from any that we have seen figures of. It is of a narrow lunate form, highly convex, the disk destitute of sculpture, and the eyes prominent.

18. Many imperfect casts of two different kinds of bivalve shells occur near Engineer Cantonment, of which one may possibly have been a Cardita.

had been found hunting in the Indian territories. These men had been liberated through the interference of some of the members of the Missouri Fur Company, and had recently arrived at Fort Lisa. During their captivity, they had been

19. Tooth of a Squalus, which seems to approach nearest to those of *Sq. cornubicus*, by its compressed conic form.

Greatest length 3 1-10 inches.

Thickness more than 2-5 of an inch.

The sides are rounded, without any appearance of serratures, thickened near the tip, and more compressed near the base.

20. Tooth of a Squalus, something like that of *S. glaucus*, but less of a triangular form, and the lateral processes are more distinct, and also less triangular than in that species.

21. An imperfect body of a crinoidal animal, *Encrinite* of Authors; the fragment is about one half of the inferior portion of the body, from which the following description is made out, taking into view the whole circumference. The plates composing the *first* costal series, (Miller) five in number, are longitudinally pentangular, much curved inwards towards the base, to join the *first* columnar joint, or perhaps the pelvis; at which part the plate is narrow, being about one-tenth of an inch, whilst the other sides are nearly three-tenths of an inch each, the superior ones being somewhat longer than the others; the *second* costal plates, (Miller) five in number, are transversely pentangular, the superior joint being long, the lateral ones shortest, the former being one-half an inch in length, the latter 3-20, and the inferior sides which articulate to the segments of the pelvis, somewhat less than 3-10 of an inch; the margins of the first costal joints, as well as the superior margins of the segments of the pelvis, are armed with a few tubercles, some of which seem to have been perforated; all the superior pieces are wanting in our specimen, but the truncated surface, on which the *scapulars* (Miller) rested, is of a pentagonal outline, and composed of a series of horizontal equilateral triangles, two to each side, which are separated on each side from the adjacent pairs by a deep groove, which corresponds, and is nearly at right angles with the exterior sutures, which join the first costal joints to each other; these triangular surfaces, are also separated from the exterior edge by two grooves, which are crenated, and include an oblong foramen between them; a single intercostal plate occurs, interposed between two of the *second costals*, it is of an oblong hexagonal form, its base resting upon the extremity of a segment of the *first* costals, which is truncated to receive it, the superior portion of this plate is much bent inward towards the abdominal cavity, its tip is quadrate and concave.

The whole exterior surface of this reliquium, with the exception of the tubercles, and sutural impressed lines, is plain and equable.

If we have not mistaken the pieces of this imperfect specimen the pelvis is wanting, but the cavity in which it existed, must have been about 3-20 of an inch in diameter.

The plate-like form of the scapulars, and their mode of articulation with each other, by an extension horizontally inwards, as we have described above, in the case of those plates which we have considered as the second costals, seem to indicate, that this species ought to be referred to the se-treated with such severity by the Pawnees, that they had often entreated us and might be put to their lives.

The interpreter returned on the 30th, having accomplished the object of his mission. Soon afterwards Mr. Dougher-

cond division of the Crinoidea, or Semiarticulata of Miller. It certainly, however, cannot be at all referred to Pentacrinites, the only genus which that author has formed in this division of the family. We refrain from distinguishing it by a name either generic or specific, until other specimens can be obtained, in which the characters are less equivocal.

We have two [illegible] costal plates, which made part of distinct individuals, larger than the above described one. Of these the surface of one is perfectly glabrous, whilst that of the other has light orbicular indentations instead of tubercles; a third very small one is perfectly smooth like the first, and doubtless formed part of the body of a young individual.

Another plate found near the same spot with the above, is of a somewhat irregular form exteriorly, or rather like the face of a truncated pyramid, of which the middle of the summit is a little produced in the form of a right angle, thus offering a notch on each side of the apex for the [illegible] [illegible] articulation. On detaching it carefully of its extraneous matrix, we discovered that it was readily adjusted by its base to the summit of those [illegible] of the fragment above described, which we have supposed to be costal plates, a prominent line on its base corresponding with the inner one of three grooves which we have described, to characterize the superior face of those plates. This plate then, agreeably to the [illegible] in which we have viewed the preceding pieces, must be a scapula; it is susceptible of considerable hinge-like motion, and appears to have been much less firmly attached to the costals than the latter are to each other.

A segment of a column [illegible], which seems to have been a five sided [illegible] of a [illegible], occurred near the same place.

22. Productus [illegible]. Sp. Convex valve, with a central longitudinal indentation; the whole surface is longitudinally ribbed, each rib being marked by two lines, in addition to the central carina.

The shell is not of frequent occurrence, and a perfect specimen has not yet been obtained, but the portions we have examined are sufficient to show that it is perfectly distinct from either of the species we have enumerated. We do not find any species figured or described by authors, like it.

23. [illegible] [illegible]. Sp. Shell much compressed, with numerous [illegible] [illegible], [illegible] in number on each valve, the alternate ones rather smaller; a very slight central longitudinal indentation, on the convex valve; [illegible]; hinge edge rectilinear, shorter than the greatest breadth of the shell.

Greatest breadth, from [illegible] to 1 inch. In its proportions it resembles the truncated portion of the productus of Martin, as represented on his plate IX, fig. 3. It is very common.

24. A shell of the length and breadth of three [illegible] occurs, the convex valve of which is transversely undulated, its umbo prominent, and curved like that of a Gryphaea, its tip resting on the base of the opposite valve, which is concave, with a triangular [illegible] [illegible] impressions seem to have been [illegible].

ty arrived from the Oto village, whither he had been sent with a deputation of Indians to aid in effecting a reconciliation between these nations. This pacification, which originated with the Missouri, was favorably received by the Oto

25. A single specimen, the cast of a valve of a shell, in some degree resembling a pecten, but without the auricles. Length rather more than 1 1-2 inches.

26. *Productus* [illegible]. Valve with numerous, [illegible] very much elongated, its beak portion [illegible] almost perpendicularly with respect to the disk near the umbo.

So singular is the structure of this shell, that the [illegible] seems to have been perfectly transverse, with respect to the general length of the shell, and small in comparison with the length. It strongly resembles the *Anomia productus* of Martin, as represented on plate [illegible] of his *Petrif. Derb.*, and like that shell is covered with small tubercles, though fewer in number, and the striæ are much more numerous and smaller.

27. Cast of a [illegible] bivalve, probably a *Cardium*, of the length of 2 1-2 inches.

28. Cast of the anterior portion of a valve of a shell like the *Cardium*, of the breadth of 2 1-2 inches.

29. On the Missouri near the Platte, occur masses of rock, which seem to be almost exclusively composed of a remarkable petrifaction, belonging to the family of multilocular shells. The shell is elongated-fusiform, and when broken transversely, it exhibits the appearance of numerous cells disposed spirally as in the *Nummulite*, but its longitudinal section displays only deep grooves. The shell was therefore composed of numerous cylinders, placed parallel to each other, and revolving spirally as in the genus *Alveolina* of Lamarck, with which its characters [illegible] correspond. But as in the transverse fracture, its spiral system of tubes cannot be traced to the centre in any of the numerous specimens we have examined, it would seem to have a solid axis, and consequently belongs to that division of the genus, that Montfort regards as distinct, under the name of *Borelis*, which seems to be similar to the *Fasciolites* of Parkinson, and altogether different from the *Milliolites* of Lamarck. Our specimens are conspicuously striated on the exterior, which distinction, together with their elongated fusiform shape, sufficiently distinguish them as a species from the [illegible], which Montfort describes as the type of his genus. No aperture is discoverable in this shell, but the termination of the exterior volution, very much resembles an aperture as long as the shell.

The length is three-tenths of an inch. And its greatest breadth, one-twelfth.

We call it *Miliolites secalicus*. Say. Mr. T. Nuttall informs us, that he observed it in great quantities high up the Missouri.

In the same mass were some segments of the Encrinite, and a Terebratula with five or six obtuse longitudinal waves.

30. Another petrifaction, abundant in some fragments of compact carbonate of lime, also found on the shores of the Missouri, possesses all the generic characters, which we have attributed to the preceding species, excepting that in the transverse fracture, the cells distinctly revolve from the cen-

ces. Mr. Dougherty was soon afterwards despatched to the Pawnees, with instructions to demand of them the property plundered from Mr. Doyle's party, also to require that the persons who had committed that outrage, should be given up. He was accompanied by two Frenchmen acquainted with the Pawnees and their language.

A party of Otoes arrived at Fort Lisa on the 26th September, with pack horses, laden with peltries, and bringing with them a soldier, who, having been accidentally separated from a small detachment, that were driving some horses from Martin's Cantonment, towards Council Bluff, had wandered about in the prairie for five days, without tasting food, when he at last, had the good fortune to fall in with the Otoes, who hospitably fed and conducted him to the trading house.

The Council Bluff, so called by Lewis and Clark, from a council with the Otoes and Missouries held there, on the 3d of August, 1804, is a remarkable bank, rising abruptly from the brink of the river, to an elevation of about one hundred and fifty feet. This is a most beautiful position, having two important military features, security, and a complete command of the river. Its defects are a want of wood within a convenient distance, there being little within a mile above, and much farther below, also a want of stone and of water, except that of the river. From the summits of the hills, about one mile in the rear of the Bluff, is presented the view of a most extensive and beautiful landscape. The bluffs on the east side of the river, exhibit a chain of peaks stretching so

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tre [illegible], yet it wants the [illegible] destitute of the solid centre [illegible] *Lenticula*. It has about four volutions. We have named this species, which is, notwithstanding the difference of the central portion, of the same genus with the preceding, [illegible] &c. As in the preceding, it is entirely filled solidly with carbonate of lime, and this substance being of a greater purity in the filled up cavities of the fossil, than in the stone, its lamellar divisions are very obvious.

The latter species, we observed about one hundred miles up the Konzas river, where it forms the chief body of the rocks in extensive ranges. It seems to be a carbonate of lime containing iron.

far as the eye can reach. The river is here and there seen meandering in serpentine folds, along its broad valley, chequered with woodlands and prairies, while at a nearer view you look down on an extensive plain interspersed with a few scattered copses or bushes, and terminated at a distance by the Council Bluff.

This position is about five miles above that selected for the wintering post of the exploring party. At the last mentioned place, a very narrow plain or beach, closely covered with trees, intervenes between the immediate bank of the river, and the bluffs, which rise near two hundred feet, but are so gradually sloped as to be ascended without great difficulty, and are also covered with trees. This spot presented numerous advantages for the cantonment of a small party like ours. Here were abundant supplies of wood and stone, immediately on the spot where we wished to erect our cabins, and the situation was sheltered by the high bluffs from the northwest winds. The place was called Engineer Cantonment. On the 26th of September, Mr. Say and Mr. Jessup, arrived in the flotilla from Cow Island, in company with Col. Morgan, Dr. Gale, and captain Magee. They had both nearly recovered their health, and entertained the liveliest sense of the eminent politeness and hospitality, which had been conferred on them by the above named gentlemen, as well as the other officers of the military expedition.

About one hundred Ottoes, together with a deputation of the Ioway nation, who had been summoned to a council by Major O'Fallon, presented themselves at our camp on the 3d of October. The principal chiefs advanced before their people, and upon invitation seated themselves. After a short interval of silence *Shonga-tonga*, the *Big-horse*, a large, portly Indian of a commanding presence, arose, and said, " My father, your children have come to dance before your tent agreeably to our custom of honouring brave or distinguished persons."

After a suitable reply, by Major O'Fallon, the amusement of dancing was commenced by the striking up of their rude instrumental and vocal music; the former consisting of a gong made of a large keg, over one of the ends of which a skin was stretched, which was struck by a small stick; and another instrument consisting of a stick of firm wood, notched like a saw, over the teeth of which a smaller stick was rubbed forcibly backward and forward; with these, rude as they were, very good time was preserved with the vocal performers, who sat around them, and by all the natives as they sat in the inflection of their bodies, or the movements of their limbs; after the lapse of a little time three individuals leaped up and danced around for a few minutes, then, at a concerted signal from the master of ceremonies, the music ceased, and they retired to their seats uttering a loud noise, which by patting the mouth rapidly with the hand, was broken into a succession of similar sounds, somewhat like the hurried barking of a dog. Several sets of dancers succeeded, each terminating as the first. In the intervals of the dances, a warrior would step forward and strike a flag staff they had erected, with a stick, whip, or other weapon, and recount his martial deeds. This ceremony is called *striking the post*, and whatever is then said may be relied upon as rigid truth, being delivered in the presence of many a jealous warrior and witness, who could easily detect and would immediately disgrace the *striker* for exaggeration or falsehood. This is called the beggars' dance, during which some presents are always expected by the performers, as tobacco, whiskey, or trinkets. But on this occasion, as none of those articles were immediately offered, the amusement was not, at first, distinguished by much activity. The master of the ceremonies continually called aloud to them to exert themselves; but still they were somewhat dull and backward. *Ietan* now stepped forward and lashed a post with his whip, declaring that he would thus punish those who did not dance; this threat from one whom they had vested with authority for this occasion had a manifest effect upon his auditors, who were presently highly wrought up by the sight of two or three little mounds of tobacco twist which were now laid before them, and appeared to infuse new life.

After lashing the post and making his threat, Ietan went on to narrate his martial exploits. He had stolen horses seven or eight times from the Konzas; he had first struck the bodies of three of that nation slain in battle. He had stolen horses from the Ietan nation, and had struck one of their dead. He had stolen horses from the Pawnees, and struck the body of one Pawnee Loup. He had stolen horses several times from the Omawhaws, and once from the Puncas. He had struck the bodies of two Sioux. On a war party, in company with the Pawnees, he had attacked the Spaniards, and penetrated into one of their camps; the Spaniards, excepting a man and boy, fled, himself being at a distance before his party, he was shot at and missed by the man, whom he immediately shot down and struck. "This, my father, said he, is the only martial act of my life that I am ashamed of." After several rounds of dancing, and of striking at the post by the warriors, Mi-a-ke-ta, or the *Little Soldier*, a war-worn veteran, took his turn to strike the post. He leaped actively about, and strained his voice to its utmost pitch whilst he portrayed some of the scenes of blood in which he had acted. He had struck dead bodies of individuals of all the red nations around, Osages, Konzas, Pawnee Loups, Pawnee Republicans, Grand Pawnees, Puncas, Omawhaws, and Sioux, Padoucas, La Plais or Bald Heads, Ietans, Sauks, Foxes and Ioways; he had struck eight of one nation, seven of another, &c. He was proceeding with his account when Ietan ran up to him, put his hand upon his mouth and respectfully led him to his seat. This act was no trifling compliment paid to the well known brave. It indicated that he had still so many glorious acts to speak of, that he would occupy so much time as to prevent others from speaking, and put to shame the other warriors by the contrast of his actions with theirs.

Their physical action in dancing is principally confined to leaping a small distance from the ground with both feet, the body being slightly inclined, and upon alighting, an additional slight but sudden inclination of the body is made, so as to appear like a succession of jerks; or the feet are raised alternately, the motions of the body being the same. Such are the movements, in which the whole party correspond; but in the figures, as they are termed in our assembly rooms, each individual performs a separate part, and each part is a significant pantomimic narrative. In all their variety of action they are careful to observe the musical cadences. In this dance *Ietan* represented one, who was in the act of stealing horses. He carried a whip in his hand, as did a considerable number of the Indians, and around his neck were thrown several leathern thongs, for bridles and halters, the ends of which trailed upon the ground behind him; after many preparatory manoeuvres, he stooped down and with his knife represented the act of cutting the *hopples* of horses; he then rode his tomahawk, as children ride their broomsticks, making such use of his whip as to indicate the necessity of rapid movement lest his foes should overtake him. *Wa-sa-be-jing-ga* or *Little black Bear*, after a variety of gestures, threw several arrows, in succession, over his head, thereby indicating his familiarity with the flight of such missiles; he at the same time covered his eyes with his hand to indicate that he was blind to danger. Others represented their manoeuvres in battle, seeking their enemy, discharging at him their guns or arrows, &c. &c. Most of the dancers were the principal warriors of the nation, men who had not condescended to amuse themselves or others, in this manner, for years before;

but they now appeared in honour of the occasion, and to conciliate, in their best manner, the good will of the representative of the government of the *Big Knives*. Amongst these veteran warriors *Ietan* or *Sha-mon-e-kus-se*, *Ha-she-a* the broken arm, commonly called Cut-nose, and *Wa-sa-ba-jing-ga*, or little Black Bear, three youthful leaders, in particular attracted our attention. In consequence of having been appointed soldiers on this occasion to preserve order, they were painted entirely black. The countenance of the former indicated much wit, and had, in its expression, something of the character of that of Voltaire; he frequently excited the mirth of those about him by his remarks and gestures. *Ha-she-a*, called Cut-nose, in consequence of having lost the tip of his nose in a quarrel with Ietan, wore a handsome robe of white wolf skin, with an appendage behind him called a *crow*. This singular decoration is a large cushion, made of the skin of a crow, stuffed with any light material, and variously ornamented; it has two decorated sticks projecting from it upward, and a pendant one beneath; this apparatus is secured upon the buttocks by a girdle passing round the body. The other actors in the scene were decorated with paints of several colours fantastically disposed upon their persons. Several were painted with white clay, which had the appearance of being grooved in many places. This grooved appearance is given by drawing the finger nails over the part, so as to remove the pigment from thence in parallel lines. These lines are either rectilinear, undulated, or zigzag; sometimes passing over the forehead transversely or vertically; sometimes in the same directions, or obliquely over the whole visage, or upon the breast, arms, &c. Many were painted with red clay, in which the same lines appeared. A number of them had the representation of a black hand with outspread fingers, on different parts of the body, strongly contrasting with the principal colour with which the body was overspread; the hand was depicted in different positions upon the face, breast and back. The face of others was coloured, one half black, and one half white, or red and white, &c.; many coloured their hair with red clay; but the eye-lids, and base of the ears, were generally tinged with vermillion. At the conclusion of the ceremony, whiskey, which they always expect on similar occasions, was produced, and a small portion was given to each. The principal chiefs of the different nations, who had remained passive spectators of the scene, now directed their people to return to their camp. The word of the chiefs was obeyed; excepting by a few of the Ioways, who appeared to be determined to keep their places notwithstanding the reiterated command of the chiefs. Ietan now sprung towards them, with an expression of much ferocity in his countenance, and it is probable a tragic scene would have been displayed had not the chiefs requested him to use gentle means, and thus he succeeded, after which the chiefs withdrew.

October 4th. At ten o'clock, the hour appointed for the council, the Indians, headed by their chiefs, arrived; and after shaking us all by the hand took their seats. There were about one hundred Otoes, seventy Missouries, and fifty or sixty Ioways. They arranged themselves, agreeably to their tribes, on puncheon benches, which had been prepared for them, and which described a semicircle, on the chord of which sat the whites, with Major O'Fallon and his interpreters in the centre. Sentinels walked to and fro behind the benches, and a handsome standard waved before the assembly. The council was opened by a few rounds from the howitzers. A profound silence reigned for a few minutes, when Major O'Fallon arose, and in a very animated and energetic manner addressed his Indian auditors. Suitable replies were given by Shongo-tonga, the Cronier and others, with all the extravagant gesticulation which is one of the prominent features of Indian oratory.

At the termination of the council, presents were made of blankets, kettles, strouding, tobacco, guns, powder and ball,

&c. The Big Horse and the Cranier only were acknowledged as chiefs, and to the latter, who did not possess a large medal, one was given in exchange for a smaller one which he possessed. No chief was acknowledged amongst the Missouries, as it is the wish of Major O'Fallon to extinguish as much as possible national prejudices between these two nations or tribes.

Cut-nose now presented to the agent his crow and bison robe ornamented with hieroglyphicks. The Little Black Bear presented his robe of white wolf and bison skin, and a pair of handsome leggins. The Black Bird presented a robe and the serrated instrument of music before mentioned, observing, significantly, that the latter was then the only weapon he possessed with which he could defend his father.

October 5th. Last evening *Loutre*, an old Missouri Indian, died; he had spoken in the council a few hours before, and remarked then that he had not long to live. He was buried without ceremony near the trading house.

October 9th. Messengers, who had been sent yesterday for the Pawnees, returned, having met with them on the Elk Horn creek, twenty-five miles distant, on their way hither. They arrived about noon, seventy in number, consisting of individuals of each of the three tribes called *Grand Pawnees*, *Pawnee Republicans* and *Pawnee Loups*, or *Pawnemahas*, and halted at some distance from our camp. As we approached them we observed the majority of them standing in a forest of young willow trees, holding their horses by the bridles, and looking dubiously around. The chief of the principal band, *Long Hair*, was haranguing them in a loud voice, "Take off your saddles; why do you stand peeping and trembling in the bushes; you ought to have trembled when the whites were seen near the Konza village, &c." We saluted the principal men in the usual manner of shaking by the hand, though not with much cordiality. Major O'Fallon then said "Pawnees encamp here and unsaddle your pipes in security; you have conducted yourselves badly, but the whites will not harm the red-skins when they have them thus in their power; we fight in the plains, and scorn to injure men seated peaceably by their fires. Think well of what you will have to say to me in council to-morrow." These assurances appeared to annul their present apprehensions, and they proceeded to encamp.

Three boats came from camp Missouri to take on board a quantity of provisions which are stored here for the troops; we exchanged salutes with them. The noise of the artillery excited the apprehensions of the Indians, who, being sensible of having grossly offended the whites, now anticipated some exemplary punishment, and were not at ease until reassured of their safety, and the motive of the firing of such great guns so near them, was explained.

In the evening, accompanied by several gentlemen of the party, we visited the camp of the Pawnees, whom we found sitting round their fires smoking their pipes in silence. Some were employed in making bows, having found plenty of *hickory*, and *hop horn beam* wood here, which are not to be procured in the vicinity of their villages. Their mules were tied to trees, feeding on the bark of the cotton wood. The three tribes were seated around different fires. We sat down in the group of Grand Pawnees and smoked with their chief Tarrarecawaho or *Long-hair*. This is an hereditary chief, of a lofty and rather haughty mein; his mouth is, perhaps through habit, drawn down a little at the corners. He has the appearance and character of an intrepid man, although not distinguished as a warrior, having, during his life, killed but a single man, who was a Spaniard. He is, however, artful and politic, and has performed some laudable actions. The following anecdote may serve in part to illustrate the more amiable traits of his character. Dorion, a Mestizo, on a trading expedition had accumulated a considerable quantity of peltry at the Pawnee republican village, when it was situated on the Republican fork of the Kansas river. As he had no horses to transport his merchandise, he requested the chief of that nation to assist him in conveying it to the Grand Pawnee [illegible] to demand [illegible] at St. Louis; the chief cheerfully ordered horses to be brought, the furs were packed upon them and they departed on the journey; but owing to some alleged misconduct on the part of Dorion, the chief, about half way, ordered the goods to be taken from the horses, and to be left on the plain. He then, with his followers, returned to his village. The trader, after securing his [illegible] resolved to go to the Grand Pawnee village, [illegible] of Long-hair. Having arrived at the residence of the chief, he related to him in what manner he had been used by the Republican chief, and concluded by requesting assistance in returning to his goods. Long-hair, without reply, ascended to the top of his lodge, and called out to his people to bring him one hundred horses. Taking the best of these, and a sufficient number of attendants, he accompanied Dorion and assisted him to transport all his [illegible] with his good offices, until he had [illegible], and had [illegible] previously paid by Dorion [illegible] having [illegible] every thing [illegible], though at the same time he [illegible] Indian goods [illegible] in his [illegible]. After [illegible] said the chief, "Dorion, I know that you are a bad man; I know [illegible] that you have a quantity of such goods as we [illegible] in these packs, and could reward me if you were liberal enough; but I ask nothing. You have a forked tongue. You have abused me to the whites, by calling me a rascal, saying I robbed the traders, &c.; but go, I will not harm you; tell the red head (governor Clarke) that I am a rascal, robber, &c. I am content."

At another [illegible] ornamented by [illegible] particular band of the [illegible] the [illegible] was inflicted by a [illegible] prisoner of the [illegible] When she had [illegible] slavery to which she [illegible] her child to the [illegible]

In a third group [illegible] of the [illegible] two years [illegible] river; and [illegible] they do not [illegible] their own [illegible] with whom they [illegible] still are, at war.

On the following [illegible] council, and [illegible]

[illegible] the necessary [illegible], fed by the [illegible] chiefs, [illegible] for the [illegible] and [illegible], they were [illegible] heartily [illegible]. We [illegible] the effect of a [illegible] never seen or heard before, would produce on the unsophisticated savage, and therefore eyed him closely, and were not disappointed to observe that he did not deign to look upon them, or to [illegible] that, by any outward [illegible], that he was sensible of their presence. The Indians arranged themselves on the benches prepared for them, and the [illegible] of the music. We were [illegible] by [illegible] [illegible] [illegible]. Our martial array of us, did not appear to arouse the wonder of the Pawnees.

Major O'Fallon rose and addressed them in a very [illegible] and earnestly, urging the offences they had committed against the white people, and admonishing them to a [illegible] in their [illegible], and to restore the horses they had stolen from [illegible] [illegible] directed against the [illegible] [illegible] appeared [illegible] their [illegible].

The [illegible] of the property which [illegible] [illegible] by [illegible] [illegible].)

The [illegible] arrived at [illegible], afforded the opportunity of [illegible] numerous [illegible], and to explore the neighbouring country. We give here some account of two species of the [illegible] observed.

[illegible]

Early in October [illegible] pleted. [illegible] party, [illegible] for their [illegible]

[illegible] of moderate thickness, slightly thicker in the middle, which [illegible]

[illegible] Length [illegible] of tail [illegible]

Mr. [illegible] pose of catching a wolf. It is a female.

Barton, in the Medical and Physical Journal for [illegible] part of the United States, in the country watered by the [illegible]

[illegible] whilst the character attributed [illegible]

Total length from nose to tip of tail [illegible] from the upper teeth to the tip of nose [illegible]

Above blackish plumbeous, when viewed from before, silvery plumbeous [illegible] aperture very large [illegible] nearly as long as the posterior feet.

This specimen [illegible] much larger [illegible] the tail more robust, and the inferior anterior pair of incisors are [illegible] Geoffroy St. Hilaire. [illegible] five on each side in addition to the two larger [illegible]

May not this be the animal [illegible] Medical and Physical Journal [illegible] be called the black shrew [illegible]

[illegible] [illegible] which [illegible] [illegible] to forget [illegible] [illegible] [illegible] every [illegible] [illegible] [illegible] [illegible] [illegible] points of which he will [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] may be [illegible] [illegible] to his [illegible] [illegible] [illegible] [illegible] [illegible] their [illegible] [illegible] [illegible].

“ [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] with the [illegible] [illegible] may be necessary [illegible] the duties of the expedition.

“ In regard to [illegible] during the progress of the expedition [illegible] will [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] the Secretary of War, and the instructions of Mr. Jefferson to Capt. Lewis, to be found in vol. [illegible] of Lewis and Clark's expedition, and regulate their observations and inquiries accordingly.

“ Lt. G[illegible] will embrace every opportunity for celestial and barometric observations, and [illegible] [illegible] [illegible] [illegible] [illegible] with the [illegible] [illegible] [illegible] also the [illegible] [illegible] and the adjacent [illegible] [illegible] [illegible] [illegible] meteorological observations [illegible] noticing the changes of weather, and all [illegible] and atmospheric phenomena. [illegible] [illegible] [illegible] [illegible] [illegible] or any other [illegible] [illegible] [illegible] may not be particularly engaged [illegible] [illegible] [illegible] [illegible].

"It is believed that the field for observation and inquiry is here so extensive, that all the gentlemen of the expedition will find ample scope for the exercise of their talents in their respective pursuits, and it is hoped that through their united exertions and perseverance a rich harvest of useful intelligence will be acquired."

On the 11th of October, Major Long and Mr. Jessup took leave of their friends at Engineer Cantonment, and accompanied by several other persons, began to descend the Missouri in a canoe on their way to Washington and Philadelphia.

[illegible]

CHAPTER IX.

Animals—Sioux and Omawhaw Indians—Winter residence [illegible] at Engineer Cantonment.

The [illegible] account of the [illegible] and near Council Bluff, and of the observations made there, we copy from the journal of Mr. Say.

Descriptions of some of the animals which occurred, are given in notes.*

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* *Vespertilio pruinosus.* [illegible] large, [illegible] as long as the head, hairy on the exterior side, [illegible] at tip, [illegible] one on each [illegible] with [illegible] and [illegible] of the head, [illegible] brown at base, then pale [illegible] the place of the [illegible] as the fur [illegible] similar to those of the back, but on the anterior portion of the breast the fur is not tipped with white, and [illegible] it is dull yellowish [illegible] of the [illegible] covered with fur. Length [illegible] 4 1-2 inches.

This bat is common in this [illegible], and was observed by Mr. Thomas Nuttall at Council Bluff. It is a fine large species, and remarkable for its [illegible] fur. It has much affinity with the New York bat, (V. Noveboracensis,) but is more than double its size, and is distinguished from it by many other characters.

The late professor Barton, [illegible] of this bat to the Phila[illegible], that had been [illegible] in Pennsylvania.

Vespertilio [illegible]. [illegible] than the head, [illegible] with two [illegible] and [illegible] from the eye. [illegible] the [illegible], including the tail [illegible]

Total length [illegible] inches. Tail 1 [illegible]

Expansion more than 12 inches.

The prairie wolves roam over the plains in considerable numbers, and during the night, the principal season of their hunts, they venture very near to the encampment of the traveller. They are by far the most numerous of our wolves, and of-

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This bat might be readily mistaken for the Carolina bat, (V. Carolinensis, Geoff.,) which it resembles in colour, but differs from it in being of a larger size, the ears broader and proportionally shorter, and an emarginated tragus, curving in an almost [illegible] manner towards the anterior portion of the ear, like that of the V. [illegible] Desm. Geoff. although not so broad. The upper incisor teeth, like those of several of our species of bats, are not prominent, they are very much inclined forward, and do not rise at their tips above the level of the intermediate callosity.

Canis latrans. Cinereous, or grey, varied with black above, and dull fulvous, or cinnamon; hair at base [illegible] in the middle of its length [illegible] and at tip grey or black, longer on the vertebral line; ears erect, rounded at tip, cinnamon behind, the hair dark plumbeous at base, inside lined with grey hair; eyelids edged with black, [illegible] with black [illegible] at tip above; [illegible] with black-brown before, and edged with black-brown behind; iris [illegible] pupil black-blue; [illegible] rostrum cinnamon, tinctured with grayish on the nose; lips white, edged with black, three series of black setæ; head between the ears intermixed with grey, and dull cinnamon, hairs dusky plumbeous at base; sides paler than the back, obsoletely fasciate with black above the legs; legs cinnamon on the outer side, more distinct on the posterior [illegible] a dilated black [illegible] line on the anterior ones near the wrist; tail bushy, fusiform, straight, varied with grey and cinnamon, a spot near the base above, and the tip black; the tip of the trunk of the tail attains the tip of the os calcis, when the leg is extended; beneath white, immaculate, tail cinnamon towards the tip, tip black; posterior feet four toed, anterior five toed.

Total length, (excepting the hair at tip of tail,) 3 feet	6	1-2 inches.
Trunk of the tail	1	1-2
Hind foot, os calcis to tip of claw	7	1-8
Fore foot, elbow to tip of claw,	1	3-4
Ear from top of head,		4
Distance from anterior canthus of the eye,		2 3-4

Taken in a trap, baited with the body of a wild cat.

The line on the anterior side of the anterior feet, near the wrist, is wanting in a second specimen.

This species varies very much in size; another specimen measured,

In total length, excluding the hair at tip of tail,	3 feet 2 1-2	inches.
Tail do	do	11 3-4
Ear from top of head to tip		3 6-8

The snout was narrower than in the preceding specimen, but in colour similar.

Another specimen was destitute of the cinnamon colour, excepting on the snout, where it was but slightly apparent; the general colour was, therefore, grey with an intermixture of black, in remote spots and lines, varying in position and figure with the direction of the hair.

ten unite in packs for the purpose of chasing deer, which they very frequently succeed in running down, and killing. This, however, is an achievement attended with much difficulty to them, and in which the exertion of their utmost [illegible]

2. *Canis nubilus.* [illegible] black, then gray, then black, the proportion of black upon the back is so considerable, as to give to the whole animal a much darker colour, than the [illegible] but the gray of the hairs combining with the black tips, in the general effect produces a [illegible] the gray colour predominating on the lower part of the sides; ears short, [illegible] brownish-black, with a patch of gray hair on the anterior side within; [illegible] blackish above superior lip, anterior to the canine teeth; gray [illegible] in a narrowed line backwards, nearly to the [illegible] with a large white spot on the breast [illegible]

Length from tip of the nose to the origin of the tail, [illegible]
Length of the vertebrae of the tail, [illegible]
Ear from anterior angle to the tip, [illegible]
From the posterior angle of the eye to the [illegible] of the ear, [illegible]
From anterior canthus of the eye to the [illegible] the tip of the nose, [illegible]
Between the anterior [illegible] of the ears, rather more than [illegible] 5

The aspect of this animal is far more [illegible] than either the common red wolf or the prairie wolf, and is of a more robust form. The length of the ears and tail distinguish it at once from the former, and its greatly superior size [illegible] As the black wolf (C. lycaon) is [illegible] Messrs. Peale and Dougherty, who transported the animal several miles from where they killed it, to the encampment.

1. *Sylvia* [illegible]

without [illegible], are so often unavailing, that they are sometimes reduced to the necessity of eating wild plants, and [illegible] to them almost indigestible, in order to [illegible]

Length 5 1-4 inches.

Shot at Engineer Cantonment early in May. This bird is distinguished by the colour of the feathers on the crown of the head, which are of a fulvous colour, tipped with the same colour as that of the neck and back, so that the fulvous colour does not appear at first sight. The wings are destitute of any white band, and the margins of the six exterior primaries are much paler than those of the others. We cannot find any description of this bird; it seems, however, to approach nearest to the S. [illegible] Nashville warbler of Wilson; but in our specimen the belly is not white, neither does Wilson's description of the colours of the head of the Nashville warbler agree at all with that of our bird.

2. *Sylvia* [illegible]. Above [illegible] [illegible] white, with two white [illegible] [illegible] white on the [illegible] [illegible] the two middle ones, with a white spot on the inner [illegible] [illegible]

Length rather more than 4 3-4 inches.

Shot in May, near Engineer Cantonment. This species seems to approach very closely to S. [illegible]

Genus [illegible], Cuv.

[illegible]. Dusky [illegible] bill [illegible] [illegible]

Length from tip of bill to that of the tail 11 3-4 inches.

Length of bill, 1 [illegible]

Length of tarsi, 1 [illegible]

Length from the [illegible] to [illegible] of the [illegible] 1 [illegible]

Tail projecting more than one inch beyond the tip of the wings.

Several specimens were shot in a pond near the Boyer creek. Corresponds with the genus [illegible], Cuv. in having the dorsal grooves at the distend the stomach, and appease in a degree the cravings of hunger.

Their bark is much more distinctly like that of the the domestic dog, than of any other animal; in fact the first

tip of the upper mandible, and in having the [illegible] almost [illegible]; but the eye is not large, nor is it placed far back upon the head, which two latter characters, combined with the [illegible] and slender figure, and the circumstance of the thighs being denuded of feathers high above the knee, and the exterior toe being united to the middle one by a membrane, which extends so far as the first joint, with the wing being [illegible] margined, combine to distinguish this species, from those of the genus to which the form and characters of its bill would refer it, and approximate it more closely to *Limosa*. In one specimen the [illegible] on each wing, were light brown, but the quills were white. It may, perhaps, with propriety, be considered as the type of a new genus, and under the following characters, be placed between the genera *Scolopax* and *Limosa*.

Bill longer than the head, dilated and rugose at tip, tip slightly curved downwards, and with a small groove; nasal groove elongated; *feet* long, an extensive naked space above the knee; toes slightly semipalmated, a membrane connecting the basal joints of the anterior toes; first of the primaries rather longest.

Genus Tringa. Lin.

1. *Tringa pectoralis.* *Bill* black, reddish-yellow at base, upper mandible with a few indented punctures near the tip; *head* above black, plumage margined with ferruginous, a dilated brown line from the eye to the upper mandible; cheeks and neck beneath cinereous, very slightly tinged with rufous, and lineate with blackish; orbits and line over the eye whitish; chin white; *back* above dusky, plumage margined with ferruginous; scapulars, interscapulars, and wing coverts black, margined with ferruginous, and near the exterior tip with whitish; primaries dusky, slightly edged with whitish, outer quill shaft white; *back* (beneath the interscapulars) cinereous, and tail coverts black, immaculate; *tail feathers* dusky, margined with white at tip, two intermediate ones longest, acute, attaining the tip of the wings, black, edged with ferruginous; breast, venter, and inferior tail coverts white, plumage blackish at base; sides white, the plumage towards the tail slightly lineate with dusky; *feet* greenish-yellow; toes divided to the base.

Length nearly	9 inches.
Bill	1 1-8

This bird is very nearly [illegible], but as the ordinary size of that bird is stated at seven inches and one or two lines, ours is doubtless a distinct species. Many flocks of them were seen at Engineer Cantonment, both in the Spring and Autumn, the individuals of which corresponded in point of magnitude; we add a description for the information of ornithologists. It is described from a specimen in the autumnal plumage. In the spring dress, the colour of the superior part of the head is much paler, almost destitute of black, and the [illegible] are brownish, margined with pale cinereous. The superior part of the head is always darker than any part of the neck, and margined with ferruginous; the plumage of the neck beneath, and the breast, does not appear to be subject to so much change, as that of the superior part of the body.

two or three notes could not be distinguished from the bark of a small terrier, but these notes are succeeded by a lengthened scream.

The wonderful intelligence of this animal is well worthy of note, and a few anecdotes respecting it may not be amiss. [illegible] constructed and tried various kinds of traps to take them, one of which was of the description called "a log trap," a shallow box reversed, and supported at one end, by the well known kind of trap sticks, usually called the "figure four," which elevated the front of the trap upwards of three feet above its [illegible]; the trap was about six feet long, and nearly the same in breadth and was plentifully baited with offal. Notwithstanding this arrangement, a wolf actually burrowed under the flooring, and pulled down the bait through the crevices of the floor; tracks of different sizes were observed about the trap. This procedure would seem to be the result of a faculty beyond mere instinct.

This trap proving useless, another was constructed in a different part of the country, formed like a large cage, but with a small entrance at the top, through which the animals might enter, but not return; this was equally unsuccessful.

[illegible] Fem. Above blackish-brown, plumage edged with [illegible] or whitish; head and neck above [illegible] [illegible] a [illegible] line between the eye and corner of the mouth, [illegible] white; [illegible] sides of the neck [illegible] [illegible] blackish-brown; tail [illegible] [illegible] [illegible] white plumage [illegible] [illegible] coverts margined with white; greater wing coverts with a broad white tip [illegible] the tip of the tail [illegible] [illegible] with white [illegible] white [illegible] on the middle of their length; [illegible] plumage margined at tip with [illegible] [illegible] white [illegible] [illegible] [illegible] margined with white, [illegible] [illegible] [illegible] A male.

Length to tip of tail . . . 7 inches.
Bill . . . [illegible] of an inch.

This bird was shot in November, near [illegible], and it is probably a variety of the very variable [illegible] in its winter plumage.

the wolves attempted in vain to get at the bait, as they would not enter by the way prepared for them.

A large double "steel trap" was next tried; this was profusely baited, and the whole, with the exception of the bait, was carefully concealed beneath the fallen leaves. This was also unsuccessful. Tracks of the animals were the next day observed to be impressed in numbers on the earth near the spot, but still the trap, with its attractive charge, remained untouched. The bait was then removed from the trap, and suspended over it from the branch of a tree; several pieces of meat were also suspended in a similar manner, from trees in the vicinity; the following morning the bait over the trap, alone remained. Supposing that their acute senses of smell, warned them of the position of the trap, it was removed, and again covered with leaves, and the bait being disposed as before, the leaves to a considerable distance around were burned, and the trap remained perfectly concealed by ashes; still the bait over the trap was avoided. Once only this trap was sprung, and had fastened for a short time upon the foot of a species, which was shot the following day at no great distance; it proved to be a species distinct from the prairie wolf, and we have described it under the name of *C. nubilus*.

In no respect disheartened by these futile attempts, many times repeated, and varied in every ingenious manner, another scheme was executed, which eventuated in complete success. This was the log trap, in which one log is elevated above another at one end, by means of an upright stick, which rests upon a rounded horizontal trigger stick, on the inferior log.

The *latrans* does not diffuse the offensive odour, so remarkable in the two species of jackalls, (*C. aureus* and *C. anthus*,) though in many respects it resembles those animals. Like the *Mesomelas*, the hair on the vertebral line is elongated; and we should be disposed to regard it as the same animal, but it differs from the description of that species, both in colour and physiognomy. The ears are proportionally longer than those of C. cinereoargenteus, and, as well as the tail, shorter than the corresponding parts of C. corsac.

This animal, which does not seem to be known to naturalists, unless it should prove to be the [illegible], is most probably the original of the domestic dog, so common in the villages of the Indians of this region, some of the varieties of which, still retain much of the habits and manners of this species.

On the 14th of October, four hundred Omawhaw Indians assembled at Camp Missouri. Major O'Fallon addressed them in an appropriate speech, stating the reasons for their being called to council, upon which *Ong-pa-ton-ga* the *Big Elk* arose, and after shaking by the hand each of the whites present, placed his robe of Otter skins, and his mockasins under the feet of the agent, whom he addressed to the following effect, as his language was interpreted by Mr. Dougherty.

"He had heard that his father wished to see him, and he had wished to see and to hear the words of his father, ever since he learned that he was ascending the river. He was informed last fall of his being at the river Platte, and as he could not then go to see him, he had now come to visit him. —And behold me, my father. All these young people you see around here are yours, although they are poor and little, yet they are your children. I have always loved the whites, since I first remember to have seen them, and this affection increases with my age. All my nation love the whites, and always have loved them. Amongst all the good things of this world I place the whites first. But it appears, that there are many nations that live nearer to you than I, that do not love you, though you have done more for them, than you have done for me. When they meet with you, they flatter you, in order to get presents from you, notwithstanding which, they would not hesitate to kill some of your people on their very house. Some of these white men shake hands with you in a friendly manner, whilst their hands are yet stained with your blood; and if you examine your own hands, my father, I think you would find some of it adhering to them. For my part, my father, I am proud to think that my hands are clean. Never has one of my nation stained his hands with the blood of a white man. I do not understand, my father, your mode of treating those who injure you. It is true I know that you have more sense than I have, but I cannot understand it. I have heard that the Pawnees have been to see you, a nation that has killed your people, and insulted your people. I was also informed that you dressed them, and at their departure put the weapons in their hands. I should not be surprised to hear that these very weapons were stained with white men's blood before they reached the Pawnee village. This is what I cannot understand. This circumstance led me to believe, that if you treated those, that have injured you, so well, you surely would treat your poor children the Omawhaws, who have never done harm to your people, with still kinder attention. But I am afraid the transaction will have a bad effect on my young men. When they heard of American troops ascending the river, they feared and suspected them. But I am fearful that this transaction will throw them off their guard, make them lose their respect for you, and cause them to do something, that they would not otherwise have done, and thus create trouble and difference between us. You told us, my father, that these troops do not come to harm us. I believe it is true. I consider them all my brothers and friends. So far from thinking they come to injure me, I regard them as my shield, to guard me against bad nations around me. You say, that if ever there is a difference between us, that it will be our fault; but I hope not, my father. I cannot think that the Omawhaws will offer any indignity to your people, now that they have seen all those troops, when they have not

[illegible]

This speech, contrary to the usual mode of Indian orators, was commenced in a low tone, the voice gradually rising as the speaker proceeded, until it attained its full intonation.

Several speakers subsequently went forward and delivered their sentiments, generally alluding to the circumstance of our treating those who injure us, kindly, and neglecting our friends.

Ta-sone, the *White Cow*, spoke with that allusion, and added, "Look at me, my father, look at my hands, examine me well, I am a wild man, born in the prairie;" and subsequently, "I told you, my father, to look at me, that you might see if there is any of the blood of your people upon me. Some, whose hands have been stained with blood, endeavour to wash it off, but some of it will still remain."

It is proper to mention, as explanatory of some of the allusions in the above speeches, that the Pawnees, at the conclusion of their council, had been invited to dine at Camp Missouri, and that many of their chiefs were there presented with sabres, as I before stated. It was to this circumstance that the above mentioned speakers had reference, as being inexplicable to them, as it seemed as if we wished to conciliate the good will of those evil-doers through fear, and yet they could hardly accuse us of fear, surrounded as we were by so formidable an array of troops.

It was evident, however, that the speakers had intentionally no reference to Major O'Fallon, as they knew he had not committed or sanctioned the acts, of which they complained in their truly delicate and peculiar manner. But they looked upon him as responsible for the actions of his people, knowing him to be the representative of the government, and that in case of wrong, they could not obtain redress from any other person. How much soever Major O'Fallon may have disapproved of the treatment which the Pawnees had received from the military, he was perfectly conscious of having conducted himself towards them, according to their de-serve, so far as power had been placed in his hands. But being thus unkindly accused, pointedly and repeatedly, of injustice, for conduct not his own, he arose and said, "Omawhaws, you say I called the Pawnees here to feast them, and make them presents, after they have killed and insulted us, but it is not true. I did not smoke the pipe of peace with them, neither will I, until our differences are settled. I told the Pawnees that, even if I stood unsupported before them, I would, nevertheless, either compel them to make reparation for their offences, or leave my bones amongst them for my nation to come and bury."

The Big Elk, and Big Eyes, were the only chiefs acknowledged by Major O'Fallon, who then made liberal presents to them for their people.

Some of these presents were distributed by the Indians after a peculiar manner, but which I learn is very common amongst the Indians of this country. A certain portion of them is placed upon the ground, and whoever can *strike the post* the most frequently, gains them. Another portion is then staked for any other competitors who may choose to advance. A valuable stake was thus offered, and an aged veteran stepped forth, and looking round upon his nation with a majestic mien, in which there was not a little expression of triumph, he seemed to challenge the bravest of the brave, to come forward and compete with him for the possession of it; but agreeably to his expectations no one advanced, and he bore off the prize by common consent, without going through the ceremony of striking.

From the 20th of October to the 10th of November, the atmosphere was generally filled with a dense smoke like a fog or stratus, which proceeded from the conflagrated prairies. It sometimes affected our vision painfully, sometimes it so far intercepted the rays of the sun, that the disk of that luminary appeared of a blood red, and the eye could repose upon it uninjured. On the morning of the 6th instant it occurred in greater quantity than at any other time, when it was so extremely dense as to intercept a view of the opposite shore of the Missouri from Engineer Cantonment.

On the 9th November some rain fell attended with thunder and lightning. The rain continued on the day following with the wind from the southeast; at evening the smoke was almost entirely dissipated, and the clouds, which were cirro-cumuli passing to the north-north-west, became visible.

A party of Sioux visited us on the 15th of November, to view the steam boat. As Major Long had left orders to put the steam machinery in action occasionally, in order to preserve it from rust, Lieutenant Graham concluded to exhibit the boat with the engine in motion. The Indians hesitated to enter the boat, fearing, as they said, that it was, or that it contained, some *great medicine* of the Big-knives that might injure them. But when on board and at their ease, one of them observed doubtingly, "he hardly thought the Big-knives had any medicine to hurt them." They appeared much delighted with the boat; its size seemed to surprise them; several measured the width of the deck by straddling, instead of pacing as we do. We exhibited to them the air-gun, magnet, &c. which considerably excited their attention. Two of the howitzers were discharged, loaded with case-shot; the effect produced, of the shot falling into the water, at unequal distances and times, was new and unexpected, and they covered their mouths with the hand, to express their astonishment. Of these warriors, three are *Tetons*, one a *Yancton* and a *Sa-ho-ne*, three different tribes of the great Dacota, or Sioux nation. They are fine looking men, with very prominent cheek bones. They are more attentive to their dress, and are much neater than the other Indians we have seen, though it is proper to observe that, as visitors, they are clothed in their best attire. They decorate their hair with a profusion of feathers of the war eagle, and of a species of owl, which we have not seen. They also suspend in the head dress an entire skin of the parapets. The hair is in great profusion, and is thrown upon the back in very long rolls, but upon close inspection the greater portion of it is perceived to be false hair artificially attached to their own, the points of junction being indicated by small masses of clay, with which the attachment is effected. Two of these Tetons are inseparable friends, were raised together from their infancy, and although not allied by blood, there is a strong personal resemblance between them, which is not a little enhanced by a studied similarity in dress and ornaments. These two individuals are firm friends to the whites. One of them was a few years since at the Sa-ho-ne village in company with a trader, and being invited to a feast, they had proceeded but a short distance, when a Sa-ho-ne rushed from his concealment and knocked the trader down with his war club. The Teton immediately attacked the assailant, felled him in his turn to the earth, gashed his body with the spear of his war-club and left him for dead. This is a strong evidence of the determination of the savages, as they are called, to protect those whom they consider under their guardianship. The Teton retaliated the blow given to the trader, not only at the immediate risk of his life in the combat, but of having to expiate the deed to many a kindred exasperated warrior, and also at the hazard of originating a war between the two bands.

In the course of the winter we received frequent supplies of provisions from camp Missouri, and by means of some exertion and diligence in hunting, we were able to procure plenty of fresh venison and other game. For coffee we substituted the fruit of the Gymnocladus canadensis, which afforded a palatable and wholesome beverage. The flesh of the skunk we had sometimes dressed for dinner, and found it a remarkably rich and delicate food.

On the 8th of December, the gentlemen of the party dined by invitation with Mr. M. Lisa.

The principal Ioway chief was soon at our camp; he is a very intelligent Indian, with a solemn dignity of deportment, and would not deign to enter our houses or even to approach them until invited. He is said to have a more intimate knowledge of the manners of the whites, than any other Indian of the Missouri, and to be acquainted with many of the words of our language, but will not willingly make use of them, fearing to express himself improperly, or not trusting to his pronunciation. He remained near Council Bluff in the autumn in order to be present at the councils with the different nations, and to observe the conduct of the whites towards them respectively, a considerable time after his nation had departed down the river to their beaver trapping. After this he went with his family to the head waters of the Boyer, and during his stay there trapped sixty beaver; when with us, he was about to go in search of his people. He had three wives with him, one of whom appeared to be about nine or ten years of age, and whom we mistook for his daughter, until he undeceived us. We showed him our books of engravings, with which he was highly pleased. The Indians almost all of them, delight to look over engravings, particularly those which represent animals; they are not soon fatigued when employed in this way.

This Indian is known by several names, as Grand Batture, Hard-heart, Sandbar, and in his own language, Wang-e-waha. During our late contest with Great Britain, he turned his back upon his nation, in consequence of their raising the tomahawk upon our citizens, and crossing the Missouri, united his destiny with the Otoes, who received and treated him with distinguished respect. Last autumn his nation joined him, and submitted to his guidance; so that the Otoes, Missouries, and Ioways were then united.

Some time since in a transaction with a captain, formerly of the United States army, he thought himself grossly insulted, and demanded on the spot personal satisfaction, agreeably to the custom of the whites, challenging his opponent to single combat, with pistols or such other weapons as he might choose.

He is esteemed the bravest and most intelligent of the Ioways, and amongst the Otoes he was associated with many equally brave with himself. But as there are national prejudices amongst the Indians as well as amongst the whites, he has not escaped from many a keen allusion to his nation. In a quarrel, which arose from some expressions of this nature, Ietan knocked him down with a war-club.

He has been in fifty battles, and has commanded in seven.

He says the white people often request the Indians to abstain from war, and yet the white people continue to fight each other, as if they wished to monopolize the occupation of war, and thereby deprive the Indian of his principal avenue to honour and dignity.

Several Omawhaws, who have been trapping in the country opposite to Blackbird hill, remained with us last night. The principal one, *A-ke-ga-wah-he*, or the *Upright horn*, has a rather handsome Sioux squaw, to whom he appears to be much attached, paying her great attention in conversation, giving her a portion of his whiskey, and handing her the pipe to smoke. She is, however, not exempted from the ordinary employments of the Indian women, and we had an opportunity today of seeing her depart from *Mr. Lisa's* with a heavy load, consisting of the goods which her husband had received in exchange for his beaver, on her back, whilst he carried only a keg of whiskey slung over his shoulders, and his gun and hunting apparatus. Previously to the departure of the Omawhaws from our establishment this morning, the brother of one of them, who, report said, had been killed by the Sioux, arrived; he has been with about ten lodges (about twenty men) of his tribe trapping on the Elk-horn, and they have taken about two hundred beavers. He has taken sixty himself, of which he presented his elder brother twenty, and is on his way to Mr. Lisa, to have a trade with [illegible] dian sent to his party to deal for the skins. It is a singular circumstance, that this is the second instance of these two brothers meeting in this vicinity, after the one had been supposed to have been killed by the Sioux.

A-ha-ga-nash-he, whom we invited to take up his lodgings for the night in our room, became alarmed at my repute as a medicine man, fearing that I would cast some spell upon him, or otherwise injure him by the operation of some potent mystic medicine: he removed his quarters to the adjoining room, where he seemed to think he was safe from my incantations.

Our hunter, whose name is *No-zan-daje*, or *He that does not dodge*, is esteemed a good hunter by his nation; but he is not a distinguished warrior, although he has been in numerous battles. He says he has killed several red skins in action, but never yet had the honour to *strike* a body. He showed us the scars of many wounds, most of which he had inflicted on himself, when in mourning for the death of his relatives and friends, by thrusting arrows through the skin and a portion of the flesh of his arms. His brother, at the same time, showed many scars which he had caused by cutting out pieces from his body with a knife, on the same occasions.

Several Omawhaws visited us on the 8th, and a party of three of them, who were in possession of a keg of whiskey, invited our hunter to accompany them, for the night, to "make his heart glad" with a portion of its contents. The Omawhaws, Otoes, Missouries, and Ioways are excessively attached to this destructive liquor.

On the 9th December, Lieutenant Swift, in company with Mr. Pilcher of the Missouri Fur Company, set out on a visit to the Omawhaws. His course was first directed towards the Elk Horn river, tributary to the Platte, and afterwards along the valley of the former, to the Omawhaw encampment, which he reached at the distance of about one hundred and twenty miles. The country over which he travelled was almost entirely destitute of woodland; the surface generally cut by numerous ravines; the soil for the most part sandy, but in some instances enriched by a black loam. He returned to camp on the 23d, his companion having purchased of the Indians one hundred and thirty beaver skins, besides racoon and deer skins.

10th. By a recent occurrence, the late treaty of peace between the Otoes and Konzas was, on the eve of being infracted. The Otoes, who were encamped for hunting near the mouth of the Platte, had four horses stolen from them about two weeks since, and subsequently ten more. These robberies were immediately attributed to the Konzas, and a war party prepared themselves to march and retaliate upon that nation. Hashea however prevented them from going, saying that their father (Major O'Fallon) had been instrumental in reconciling them to a peace with the Konzas, and it would be highly improper for them to strike a blow, without asking his opinion upon the subject. It seems more probable that the horses have been taken either by the Sauks or Ioways. The latter appears to be a faithless people; they obtained a considerable quantity of goods on credit, last fall, from the Missouri Fur Company, and now, we are informed, instead of returning to discharge their debts, they are on their way down the river to barter their beaver at Fort Osage. It is said they will inhabit their old village, on the river Des Moines, the ensuing season.

15th. Many Indians visited us yesterday and to-day, some of whom brought jerked deer meat, mockasins, &c. to exchange for their favourite drink, and for trinkets. But as we have none of the latter, and as the former is interdicted from them by our laws, we are not authorized to make any purchases. That they do contrive to get whiskey elsewhere, perhaps of the traders, we have abundant proof. Yesterday a squaw got drunk, and made little noise; but her companions, after a little time, carried her off to their encampment.

As we were cutting up a log for fuel, one of the Omawhaws seeing a knot or protuberance of the wood, suitable to form into a bowl, requested us to cut it off for him; but not choosing to gratify him in that manner, we offered the axe we were using, that he might cut it in his own way; he, however, would not accept of it, but pointed to the palm of his hand, giving us to understand that such labour would make his hand sore and hard; he then called one of his squaws, who immediately went to work, and handled the axe very dexterously. Observing several young Indians passing, I indicated to her the propriety of requesting one of them to assist her, but she laughed significantly, as if she would say—you are [illegible].

The Indians are very fickle in bargaining. An Indian, some time since, exchanged his rifle for Mr. Dougherty's shot gun; yesterday he reversed the bargain, giving a pair of mockasins in return; and this morning he requested to exchange again, in which he was gratified.

A squaw offered to exchange mockasins for a couple of our military stocks. We could not conceive to what use she would apply them, but, upon inquiry, we learned that she wished to ornament the crupper of her horse with them.

The stone quarry, which supplied limestone for building chimnies at Camp Missouri, was situate at the distance of an hundred yards below our cantonment. The labourers that were employed in this quarry opened upon many large fissures, in which were found a number of serpents that had entered there for the purpose of hybernating. Of these, three species appear to be new.*

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* 1. Coluber *flaviventris*. Olivaceous, beneath yellow; inferior jaw beneath white; scales destitute of carinæ.

Description. Body above olivaceous, tinged with brown on the vertebral [illegible] at tip, posterior edges and lateral edge black; abdo-

This morning [illegible] Dickerson were fired upon by a war party of five Ioway Indians, and two were wounded, [illegible] curred on the east side of the river, nearly opposite to our encampment. When they fired, each one called out his name [illegible]

[illegible] yellow, rather pale, [illegible] the origin of the plates [illegible] series of [illegible] scales each, [illegible] on each side between the two [illegible] plates [illegible] the [illegible] black brown, [illegible] by a [illegible] with two [illegible]

Plates 170 scales 54.

174.

Total length [illegible] 2 ft. 4 1-2 in.

Tail [illegible] 5 6-8.

Head to the tip of the maxillary bone [illegible] 1 3-10

Another specimen plates 130 scales [illegible]

Total length [illegible] 2 ft. 11 3-8 in.

Tail [illegible] 11 1-2

Three specimens were found. The lateral [illegible] of one [illegible] but that of the smaller one had on each side of the plates [illegible] double series of reddish brown spots, irregularly alternating, [illegible] these were so indistinct as not to be noticed at the first glance of the eye. The tip of the tail in the last is mutilated.

C. parietalis. Above blackish, with three yellowish [illegible] a series of black [illegible]

Description. Body above blackish [illegible]

Plates 166 scales 93.

Total length [illegible] 1 ft. 3 3-10 in.

Tail [illegible] 4 9-10.

This is a common serpent in this section of country. In order to render the lateral red spots very apparent it is necessary to dilate the skin, when they exhibit a very striking character, being of a vermilion red. It varies in having the lateral series of red spots alternating with a series of smaller red spots nearer to the dorsal line.

In common with *ordinatus* it has a double common white spot on the gastral plates, and a series of black spots on each side of the inferior surface of the body; but in addition to the proportions of plates and scales, [illegible] to the Indian custom. A party of [illegible] then assembled, and pursued them about 15 miles, but without success. [illegible]

[illegible] Two Oto warriors, and a boy, nephew of [illegible] Gray Eyes the elder, visited us this afternoon. They have been hunting on Blue-Water creek, in the neighbourhood of the Konzas hunting camps, and not distant from the village of the latter; they have been so fortunate as to take one hundred and forty beavers, the skins of which they left at their village, under the care of the son of Gray Eyes and their squaws; their business in this quarter is to look out for the best market for their peltries. They say it was certainly not the Konzas who stole the horses from their brethren, who are encamped near the confluence of the Platte. They attribute that theft to the Ioways, who, they say, are still fools, as they always have proved themselves to be.

[illegible] and length of tail, the red colour of the lateral [illegible] sufficiently [illegible] its specific [illegible], from that [illegible] of the United States.

3. *Coluber proximus.* Body above black, [illegible] vittæ [illegible], a double white spot on the [illegible] plates.

Description. Body above black, with three [illegible] vittæ [illegible] occupying the dorsal series of scales and a [illegible] of [illegible] with [illegible] than the [illegible] of the [illegible] series of scales [illegible] with the black is tinged with [illegible]; head with seven [illegible] plates above; [illegible] with a [illegible] plates [illegible]; the superior [illegible] posterior [illegible] of the eye three scales, of which [illegible] white [illegible] angles with a small black [illegible] inferior [illegible] white beneath [illegible].

Total length 2 ft. 1 3-4 in. Plates 170

Tail 7 3-4 Scales 90

Resembles *Coluber sauritus*, *ordinatus* and *parietalis*. [illegible] white lines, may be observed by [illegible] the black portion of the skin as in *ordinatus*, these lines or spots are [illegible] upon the [illegible] and upon the posterior portion of the body. The [illegible] tip of the tail is wanting in this specimen.

It differs from *sauritus* in the numerical proportion [illegible]; from *ordinatus* it may be distinguished by being destitute of the two series of black points beneath; it is a [illegible] snake than the serpent [illegible], and the tail is proportionally longer.

[illegible]

30th. In the morning a [illegible] from the north, the beautiful phenomenon appeared at sunrise, consisting of three luminous spots, at about 22° distant from each other; the central one of these was the real place of the sun, and the others were to the north and south of it. As the sun ascended towards the zenith, the mock suns continued to appear equally and parallel with it, but became gradually fainter, until they disappeared near the meridian.

Evening. A complete paraselene appeared about the moon, of the diameter of 44 degrees.

The mercury was below Zero the greater part of the day, in Fahrenheit's thermometer.

31st. Several Canadians, in the employ of the Missouri Fur Company, came this evening to dance and sing before us, agreeably to the custom of their country, in celebration of the termination of the year. They were attired with great effect in the Indian manner, clothed with bison robes, and had bells attached to different parts of their dress. So completely were they disguised, that several of their company, who happened to be present, had much difficulty to recognize them. This custom is called La Guenelé, and may have had its origin in the same cause that produced our Belsnickle, who makes their appearance on Christmas eve. We gave them what was expected, whiskey, flour, and meat.

January 4th, 1820. Mr. Graham and I measured the width of the river in two places, a short distance below our cantonment, and a short distance above; the latter gave two hundred and seventy-seven and one-third yards, and the former one hundred yards.

We hear the barking of the prairie wolves every night about us; they venture close to our huts; last night they ran down and killed a deer, within a short distance of our huts; this morning the remains of the carcass were found, consisting only of bones and skin.

Mr. Fontenelle, in the employ of the Missouri Fur Company, who has been absent for some time trading with one of individuals of the Omawhaws, called to-day at his residence. He stated that they were much straitened for food, subsisting for some time upon the fruit of the red berry, which they gathered straight far towards the prairie, under [illegible] met with some of the nation of Sioux, called Gens du Lac by the French. They have been much distressed by a disorder, which, from the description given of it, appears to be the quinsy. This same band is said to have suffered much from the small-pox last autumn. They were also very nearly starved for want of food; but they said, if they could hold out until they arrived at Min-de-wah-tonga, or Medicine lake, (or the same Spirit lake) they would do very well, as they had there a considerable quantity of wild oats buried or cached, as the French say.

13th. Ietan,* or Ota, of whom we have before spoken, visited us to-day, for the purpose of gaining [illegible] ed. He left his people at the Republican fork of the Konzas river, and intends, as soon as he returns, to lead a party in pursuit of bisons, which he says are in plenty on the Loup fork of the Platte, about sixty miles distant from us.

14th. Ietan called this morning, and as some of our party were going to visit at Camp Missouri, he accompanied them, in order to obtain Major O'Fallon's permission for his nation to go to war with the Konzas. He informed the agent that individuals of that nation had sometime since stolen horses from them. That one of the bravery [illegible] this fall, had gone to the Konzas village to demand the horses; but seeing a number of horses belonging to that nation when he arrived near the village, he could not resist the temptation of immediately retaliating by seizing several and appropriating them to his own use. But, Ietan said, he thought the honour of his nation still called for war, and he solicited the acquiescence of the agent in that measure. The

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*Sha-mo-ne-kus-se.

Major replied, that his opinion ought to have been asked previously to the retaliatory measure, which had certainly been prematurely taken, as they were not certain that the Konzas were the offenders, and that this ought to have been ascertained before any depredation on the Konzas had been committed. But the course which he would now advise them to pursue was, to send a deputation to the Konzas, for the purpose of ascertaining the fact, to return the Konzas' horses, and to demand their own. This course seemed satisfactory to the warrior, who, however, stated that if the Konzas attempted to steal horses from them in future, he would certainly lead a war-party himself against them.

10th. Mr. Woods, of the Missouri Fur Company, has returned from a trading excursion. He reports that he saw several of the Pawnee caches, which had been broken open and robbed of their corn by the Omawhaws. This is by no means a rare occurrence with the Indians, but it does not appear that it has ever led to hostilities between nations; they say that when a person is in want of food, he has a right to take any he can find.

Corporal [illegible], who went out this morning to kill rabbits, returned, soon after, with twenty-seven, which he had killed with single balls.

February 11th. Several Oto Indians have visited us within the last day or two, and one of them, [illegible], remained with us last night; he was finely dressed, had on a chief's coat laced with silver, and a profusion of wampum about his neck, and suspended to his ears; he departed this morning, on his way to the Omawhaws, to trade for horses.

The ice on the Missouri is sixteen inches in thickness, that of the Boyer creek fifteen and three fourths.

12th. Messrs. Dougherty, Peale, and myself, with an assistant, encamped at a pond near the Boyer to obtain fish; we cut several holes in the ice of the pond, and obtained one Otter and a number of small fishes, amongst which three

[illegible]

In [illegible], Mr. Zenoni, of the Fur Company, [illegible] the Elk Horn [illegible] Mr. [illegible] had been, they were [illegible] Indians; and although they [illegible] a few [illegible] and killed, they were not so fortunate as to [illegible] for subsistence, [illegible] they [illegible] a state of [illegible] time, on an allowance of a little [illegible] per day. He found that the upper part of the Elk Horn had not frozen during the severe weather, but still remained open. This circumstance seems to indicate the flow of a great quantity of spring water, of [illegible] temperature, in that part of the stream [illegible] can congeal.

19th. The sand is blown by the violence of the wind from the sand bars of the river, so as to resemble a dense fog. We have been hitherto very well supplied with fresh meat, from game killed principally by Mr. Peale, who, on one occasion, killed two deer at a single shot and with one ball; but we are now reduced again to salt pork of a very inferior quality. The party, with the exception of myself, continue to enjoy good health.

22nd. Messrs. Dougherty and Peale returned from a hunt, having killed twelve bisons, out of a herd of several hundreds they met with near Sioux creek, and brought us a reasonable supply of meat. They saw several herds of elk, and yesterday they saw swans, geese, and ducks flying up the river. A dinner and ball were given at Camp Missouri, in honour of the day, to which our party were invited.

24th. Mr. Graham and I endeavoured to ascertain the rapidity of the current of this part of the Missouri, at the [illegible] in the ice to float a porter bottle, to which the proper specific gravity was given, by partially filling it with water; it was attached to a cord of one hundred and [illegible] feet in length; it floated this distance in six successive experiments in the following several times 1' 07"—1' 06"—[illegible] 1' 06"—1' 07"—1' 07", the mean of which is 1' 07 [illegible] giving a velocity of 1 mile 464 yards 1 1-3 feet per hour. In these experiments, however, the superficial current of water only was indicated, and as we had reason to suppose that this stratum was more impeded by friction against the [illegible] surface of the ice than it would be by the atmosphere, it became an object to ascertain the average velocity at different depths. With this view a staff ten feet long was made to float vertically, by means of a weight attached to the inferior end [illegible] of one hundred and seventy-[illegible] was run [illegible] experiments, [illegible] the following intervals of time, in four experiments, viz. [illegible]—1' 10"—1' 11",—of which the mean is [illegible] 2"; which would [illegible] indicate a current of the velocity of 1 mile [illegible] yards 1 foot per hour. Thus the average velocity of ten feet in depth of the current of the Missouri is greater by almost 663 yards, in a single hour, than that of a superficial stratum of about six inches depth, during the frozen state of the river. During these experiments the atmosphere was nearly calm.

[illegible] which had been previously [illegible] by means of a strong fire in and upon it. It was now covered with cinders and earth, to the depth of about one foot, and a strong fire was made over it. In this situation it remained until it was taken up for the table to-day, when it was found to be excellent food. Mr. Lisa and family dined with us by invitation. That we have sometimes food in great sufficiency, the provision upon our table this day will sufficiently attest. It consisted of the entire bison hump, above mentioned; the rump of a bison roasted; boiled bison meat; two boiled bison tongues; the spinous processes roasted in the manner of spare ribs; sausages made of minced tender loin and fat, &c. It is true that we have no vegetables whatever; but having been so long estranged from them we scarcely regret their absence. Their place is supplied by excellent wheat flour, of which our cook prepares us bread fully equal, in point of excellence, to any that we have ever eaten. The above repast was prepared for eleven persons, of whom two were ladies. The collation was succeeded by coffee as a dessert.

February 28th. I ascertained the temperature of spring water, which, however, was somewhat exposed to the atmosphere, but in a shaded situation, and in a ravine, to be 47°; that of the atmosphere being at the same time 56°, and that of the river 32°, of Fahrenheit's scale.

Wednesday, March 8th. The Big Elk, Big Eyes, and Wash-co-mo-ne-a visited us to-day on their way, with their attendants, to the traders with jerked bison meat. They presented us with five large pieces. The Big Elk, principal Omawhaw chief, is much pitted with the small pox, and is of commanding presence. He speaks with great emphasis, and remarkably distinct. He observed that we must think them strange people to be thus constantly wandering about, during the cold of winter, instead of remaining comfortably housed in their village; "but," said he, "our poverty and necessities compel us to do so, in pursuit of game; yet we sometimes venture forth for our pleasure, as in the present instance, to visit the white people whom we are always delighted to see." Big Eyes is a large and remarkably muscular man. His nose is that of the European, the opposite to the Roman curve; he is second chief of the Omawhaws.

The Omawhaw chiefs remained with us the greater part of the following day, and presented us with eight more pieces of jerked meat. We presented them in return with some tobacco, &c. The Big Elk made us a considerable harangue, with all the remarkable vivacity, fluency, and nerve of Indian eloquence, in which he said that he would address me by the title of father; "and you," said he to Mr. Dougherty, "whom I know so well, I will call brother." "The Indians around," said he, "who tell the white people that they love them, speak falsely, as is proved by their killing the white people; but my nation truly love you, they have never stained their hands with the blood of a white man, and this much cannot be said by any nation of this land." He added a strong expression, that such was his attachment to us, that he believed that he should, at a future day, be a white man himself.

When they took their leave, we advised them not to visit camp Missouri, telling them, what in fact they had already been informed of, that many of the soldiers were sick; (we did not wish them to observe the extent of the malady, with which that camp was afflicted,) but Big Elk remarked, that it had been his intention to go there, and it was not fear that could prevent him; his life was at the disposal of the great Wahconda only, and he could not die before his time; "but," said he, "agreeably to your request I certainly will not go."

Of all the objects which we exhibited to the view of the chiefs, quicksilver (mercury) seemed to excite the most surprise; they weighed the vessel, in which it was contained, in their hands, dipped their fingers into it, and were surprised at the resistance which it offered to the immersion, and what appeared most singular was, that they should be withdrawn without any appearance of moisture upon them; that they might not be deceived they repeated the experiment again and again. A couple of iron nails were then thrown upon the mercury, and as these did not sink to the bottom, they pressed them down with their fingers; but finding that the nails constantly arose again to the surface, the Big Elk returned the vessel to me, saying, with a smile of pleasure strongly impressed on his strongly marked countenance, that the fluid was the Omawhaw's Wahconda.

The last load of stone, which was taken from the quarry early in December last, was prevented from reaching camp Missouri by the floating ice; the boat was driven ashore and abandoned. It was now observed floating down the river, with a large quantity of drift ice, and, when opposite our cantonment, was readily secured by Major Ketchum, without having received any injury whatever. Major Ketchum, with a detachment of men, has been engaged for two or three days past in cutting out of the ice, three of the boats from our harbour. These, together with one, which is at Camp Missouri, are intended to convey the sick from that camp down the river to Fort Osage. Camp Missouri has been sickly, from the commencement of winter; but its situation is at this time truly deplorable. More than three hundred soldiers are, or have been sick, and nearly one hundred have died. This fatality is occasioned by the Scurvy (Scorbutus). Individuals who are siezed rarely recover, as they cannot be furnished with the proper aliments; they have no vegetables, fresh meat, nor antiscorbutics, so that the patients grow daily worse, and entering the hospital is considered by them as a certain passport to the grave. Yet it is some consolation to reflect that all the science, care, and attention of the healing art have been exerted for the relief of the sufferers by Doctors Gale and Moore, as far as their present insulated situation will admit. The causes, which have been productive of all this disease, are not distinctly known, although there are many supposed ones to which it has been imputed. But it was generally remarked that the hunters, who were much employed in their avocation, and almost constantly absent from Camp Missouri, escaped the malady.

On the 19th *Mr.* Immel, of the Missouri Fur Company, returned from an expedition to the Sioux. During his stay in the vicinity of the pseudo volcanoes, which occur on the banks of the Missouri, a tremendous subterranean explosion occurred, which much alarmed the Indians, as well as the whites; the concussion was succeeded by a large volume of dense smoke from the aperture of the volcano, by the sinking in of a portion of the hill in the rear, and by the cracking of the ice in the river. Messrs. Peale, Swift, and Dougherty departed in a periogue yesterday, on their way to the Bowyer creek to hunt.

An igneous meteor, or Jack o' lantern was seen on the evening of the 20th, near our cantonment; it was described to me as of the size of a double fist, with a caudate appendage or tail of the length of about two feet; it emitted a light of the colour of the flame of burning sulphur; it passed along the river shore nearly over the observer's head, at but a very small elevation, nearly in a right line, with an equable motion, about as rapid as the flight of a bird, and with an audible sound like the blowing of a moderate stream of air through a thicket; it was visible about one half a minute, when it crossed the river, became paler, and disappeared.

The waters of the Missouri have been as clear during the winter as ordinary rivers; the earthy matter, which they hold in suspension during the temperate and warm weather, and which every person, who views the river, remarks as characteristic of its waters, subsides as soon as the wintry temperature occurs, but is again renewed in the Spring. They have been gradually more and more turbid, these two or three days past. The ice in the river broke up on the 29th ult., and entirely disappeared on the 19th instant.

Great flights of geese, swans, ducks, brant, and cranes have been passing up the river, at their usual migrating altitude above the surface of the earth; but this migration of these aquatic birds has nearly ceased.

April 5th. A war party of Omawhaws arrived at the trading house of the Missouri Fur Company. They are one of three parties, which have been for ten days past in pursuit of a war party of thirteen Sauks, who carried off a number of horses from near the Omawhaw village. They pursued the trail of the Sauks until they lost it nearly opposite to this place; they nevertheless continued the pursuit in the direction which they supposed the enemy had taken, but are now returning unsuccessful; they say they are in hopes that one of the other parties may overtake them. It seems probable that it was this same party of Sauks who fired upon a soldier on the 30th ult.

6th. The war party mentioned yesterday visited us this morning, on their way home. They danced for us, and after receiving bread, buffaloe meat, and tobacco, departed well pleased. In the afternoon another war party of eleven Omawhaws, who had also been in pursuit of the same Sauks, arrived. We were notified of their proximity by hearing their war song, and going out, we observed them at a short distance arranged in a line, from the centre of which were elevated two handsome streamers, which, upon their approach, we found to be two long lances, to which feathers of different colours, fancifully arranged, were attached. The partizan advanced, and made us a speech, as usual, in which he gave an account of their adventures, and concluded by praising the kindness of the whites, their hospitality, and their greatness in arts and arms. This address being well understood to aim at food and lodging, though neither of these were mentioned, we supplied them with bison meat, bread, and maize, and invited them to remain with us during the night to rest themselves in comfort and safety. They immediately sat down, and, the food being portioned out by one of the warriors, they proceeded to eat with the appearance of such appetites as convinced us that their fast had been of long duration. In conversation during the evening the partizan said that they had followed a considerable trail, supposing that the Sauks had taken that direction; that they observed stakes stuck in the ground at certain distances, and the trees *blazed* as far as they went upon that trail. He inquired if we knew the reason of such marks; he was then informed that it was to indicate the course of a road which was to be made in that direction, and that if he had travelled far enough upon the trail he would have met with towns of white people, who would have treated him well. After musing sometime, he observed, that they had travelled a good distance on that rout, and having occasion to deviate a short distance from it, they found when they returned that a white man and three horses had passed along during their absence; (this was Lieutenant Fields, the express,) they immediately dispatched two of their young men back to follow him, and to learn if he had met the fugitive Sauks; but they could not overtake him. "We continued on," said *Naugh-ken-ne* (or the *Left hand*,) "with all speed; but at length, being almost famished, we were necessitated to halt and hunt; of course we gave over the pursuit. Not wishing to return to our nation without obtaining some trophy, we resolved to go to Nishnebottona in order to strike upon the Ioways, who, we had been informed, were at that place; but when we arrived there, we had the mortification to learn that they were gone; we must, therefore, return without these poor young men having any opportunity to distinguish themselves." "Did you not," we asked, "make peace with the Ioways last season?" "Yes, it is true we made a kind of peace with them, but you know they are bad men; we do not like them; the whites do not like them; perhaps it was a party of that nation, and not Sauks, that stole our horses, and you know it was very hard to be obliged, after all our difficulties and starvations, to return to our people without either scalps or horses. We wished to obtain some trophy that should repay us for our toils." In the evening they sang for our amusement a number of tunes, whilst two or three danced as well as they could in our small chamber. A negro belonging to the Fur Company coming in on an errand, they spoke of him as the *black whiteman*, and one of them jokingly said, he was a Waasabajinga, or little black bear.

The Indians departed early on the 7th, with many thanks for the attention they had received. Before they went, they presented to us a wild cat, which they had shot, but we advised them to keep it to eat on the way home, upon which they thanked us for it, as if they had never owned it.

11th. We learn that a third war party of Omawhaws, who departed in pursuit of the Sauks before either of the others, were met by a strong party of that nation, who were on their way to the Omawhaw village; they however escaped from them with the loss of one man killed and several wounded; the loss of the Sauks is not known. The party speak highly of one of their number, a boy of twelve years, who, at a critical juncture of the engagement, ran up to several of the enemy and flashed his gun three times at them; he escaped unhurt.

CHAPTER X.*

Account of the Omawhaws—Their Manners and Customs and religious rites—Historical notices of Blackbird, late principal chief.

A great portion of the information contained in the following pages, respecting the Missouri Indians, and particularly the Omawhaws, was obtained from Mr. John Dougherty, deputy Indian agent for the Missouri, who had an excellent opportunity of making himself acquainted with the natives, by residing for a time in the Omawhaw village, and by visiting all the different nations of this river.

This gentleman with great patience, and in the most obliging manner, answered all the questions which I proposed to him, relating to such points in their manners, habits, opinions and history, as we had no opportunity of observing ourselves. And we have much to regret that it is not in our power to present the reader with a biographical sketch of this amiable and intrepid traveller.

The permanent Omawhaw village is situate on Omawhaw creek, within two and an half miles of the Missouri river, and about one hundred miles by water above Engineer Cantonment, and seventy by land. It consists of dirt lodges, similar to those of the Konzas already described. Omawhaw creek takes its rise from the bluffs in the rear of the village, and discharges into the river, at the distance of seven miles below. About two miles from the town, it dilates into a large pond, which is filled with luxuriant aquatic

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* The succeeding chapters, which relate to the manners and customs of the Indians, chiefly the Omawhaws, are from the notes of Mr. Say.

[illegible]

them in carrying burdens, like [illegible] dogs of the [illegible]
Tartars ; but when they are informed of the [illegible]

[illegible] them, of hearing all the distinguished names, they discharge their duties with pride and satisfaction.

When they have performed this [illegible], the servants give notice to the steward, who then sends two or three old public criers to the lodge; he invites them to be seated near him, and after the ceremony of smoking, he addresses them in a low voice, directing them to pass through the village, and invite the individuals whom he names to them, to be [illegible] present at the feast, which is now prepared. "Speak in a low voice," says he, "and tell them to bring their bowls and spoons." The criers having thus received their instructions, sally out together, and [illegible] in various directions, through the village, in the way of [illegible] the names of all the [illegible] announced. Having performed this duty, they return to the lodge, and are soon followed by the chiefs and warriors.

"The host seats himself in the back part of the lodge facing the entrance, where he remains during the ceremony.

"If the feast is favoured with the dignity of [illegible], he directs them [illegible] where to seat themselves [illegible] which they be arranged [illegible], and the [illegible]; if he is a warrior, he seats the principal chiefs of the village by his side, who [illegible] the situation which those who enter ought to occupy; this information is repeated aloud by the host.

"When the guests are all arranged, the pipe is lighted, and the indispensable ceremony of smoking succeeds.

"The principal chief [illegible] then rises, and extending his expanded hand towards each in succession, (see language of signs, No. 15,) gives thanks to them individually by name, for the honour of their company, and requests their patient attention to what he is about to say. He then proceeds somewhat in the following manner. "Friends and Relatives: we are assembled here, for the purpose of conasking respecting the proper course to pursue in our next hunting excursion; whether the quantity of provisions at present on hand, will justify a determination to remain here to weed our maize. If it be decided to depart immediately, the subject to be then taken into view, will be the direction, extent, and object of our route; whether it would be proper to ascend Running-Water Creek, (*Ne-bro-ra*, or Spreading water), or the Platte, (*Ne-bras-kah*, or Flat water), or hunt the bison between the sources of those two streams; or whether we shall proceed farther, towards the Black hills of the south-west, in pursuit of wild horses, &c."

Having thus disclosed the business of the council, he is frequently succeeded by an old chief, who thanks him for his attention to their wants, and advises the assembly to pay great attention to what he has said, as he is a man of truth, of knowledge, and of bravery; he further assures them, that they have ample cause to return thanks to the great Wahconda or Master of life, for having sent such a man amongst them.

The assembly then take the subject into consideration, and after much conversation, determine upon a route, which Ongpatonga proposed in his speech. This chief, previous to the council, is careful to ascertain the opinions and wishes of his people, and he speaks accordingly.

He sometimes, however, meets with opposition from persons who propose other hunting grounds, but their discourses are filled with compliments to his superior knowledge, and good sense.

The proceedings of the council, are uniformly conducted with the most perfect good order and decorum.

Each speaker carefully abstains from militating against the sensibility of any of his hearers, and uncourteous expressions, towards each other on these occasions, are never heard. Generally at each pause of the speaker, the audience testify their approbation aloud, by the interjection *heh*, and as they believe that he has a just right to his own opinions, however absurd they may appear to be, and opposite to their own, the expression of these excites no reprehension, and if they cannot approve, they do not condemn unless urged by necessity.

During the council, the criers remain seated near the fire listening to the proceedings, and at the same time attending to the culinary operations, as neither the squaws nor the children are admitted.

When the food is sufficiently cooked, the criers remove the kettles from the fire, and, at the proper time, one of them takes up a portion of the soup in a spoon, and after presenting it towards each of the cardinal points with the hand, whose back is turned upward, and the palm extended, he casts it into the ashes of the fire; a small piece, of the choice part of the meat, is also sacrificed to the great Wahconda with the same formality, and is doubtless intended as an impetratory oblation.

They then serve out the food to the guests, placing the first portions of it before the chiefs. Each individual on the reception of his portion, returns his thanks to the host in such respectful expressions, as become his relative consequence, as How-je-ta-ha—[illegible]—[illegible], &c., thank you father—thank you younger brother—thank you uncle, &c., after which they eat in silence. The criers help themselves out of the kettle, but are careful to leave a portion in those that are borrowed, to compensate for their use.

The feast terminated, the ceremony of smoking succeeds, after which, the business and enjoyments of the council being concluded, the guests rise up in succession, and returning thanks to the host pass out of the lodge in an orderly manner, first the warriors and afterwards the chiefs.

The criers now sing through the village in praise of the host, thanking him before the people for his hospitality, repeating also the names of the chiefs who were present, and thanking them for their attendance. The old criers, who they say, are disqualified by age for any other occupation than those of eating, smoking, and talking; they also communicate to the people the resolutions of the council.

The prospect of a journey is highly grateful to the squaws who lose no time in preparing for the day of departure, by actively and assiduously occupying themselves, in mending mockasins, and other clothing, preparing their appointments and dog-sleds, and depositing in the earth, for safe keeping, all the moveables, which are not to be transported with them on the journey.

The men in the mean time amuse themselves with hunting, playing with the hoop and stick, cards, dancing, &c. whilst at night the young warriors and lovers are occupied with affairs of gallantry, or contriving assignations. The young men also adorn themselves with paint, and do honour to chiefs, and distinguished braves, by dancing in their respective lodges.

The day assigned for their departure having arrived, the squaws load their horses and dogs, and take as great a weight upon their own backs as they can conveniently transport, and, after having closed the entrances to their several habitations, by placing a considerable quantity of brushwood before them, the whole nation departs from the village.

Those affluent chiefs and warriors, who are the owners of many horses, are enabled to mount their families on horse-back, but the greater portion of the young men and squaws are necessarily pedestrians.

Many of the latter, besides the heavy load upon their backs, surmounted perhaps by an infant, lead a horse with one hand, on the load of which another child is often placed, and properly secured there in a sitting posture. In the other hand, they often bear a heavy staff of wood, sharpened to a broad edge at one end for the purpose of digging up the *Hopanie*, or ground apple, called by the French *Pomme Blanche*; a root resembling a long turnip, about the size of a hen's egg, with a rough thick skin, and hard pith. It is sometimes eaten raw, and has a sweetish taste, but is rather dry: or it is dried in the sun, and pulverized; in this state it furnishes the chief ingredient of an excellent soup.

The hunters scour about in every direction, to reconnoitre the country for enemies and game, but notwithstanding the constant activity of the hunters, the people are often much straitened for food, previously to their arrival within view of the bisons, an interval of fifteen or twenty days.

When at length the highly welcome news is brought, of the proximity of a herd of these animals, the nation proceeds to encamp at the nearest water convenient.

The travelling lodges, or as they are usually denominated skin lodges, are easily folded up, and suspended to the pack-saddle of the horse, for the purpose of transportation. The poles intended to sustain it, are at one extremity laid upon the neck of the horse, whilst the opposite end trails upon the ground behind. When pitched, the skin lodge is of a high conic form; they are comfortable, effectually excluding the rain, and in cold weather a fire is kindled in the centre, the smoke of which, passes off through the aperture in the top; on one side of this aperture is a small triangular wing of skin, which serves for a cover in rainy weather, and during the rigors of winter it regulates the ascent of the smoke. The door way is a mere opening in the skin, and closed when necessary, by the same material. They are often fancifully ornamented on the exterior, with figures, in blue and red paint, rudely executed, though sometimes depicted with no small degree of taste.

The hunters, who are in advance of the main body on the march, resort to telegraphic signals, from an elevated position, to convey to the people information respecting their discoveries. If they see bisons, they throw up their robes in a peculiar manner, as a signal for a halt; another disposition of the robe, announces the proximity of an enemy; and if one of their party has been killed, two of the warriors commence the manœuvre by running towards each other from a little distance, and in passing, one of them throws himself upon the earth.

On perceiving these latter signals, the warriors of the nation seize the bucklers from their squaws, and with their martial weapons, ride in full speed to meet them, exhibiting more the appearance of a race, than an ordinary advance to mortal combat.

The hunters after making the signal for bisons, to induce the people to halt and encamp, return as expeditiously as possible, and on their approach are received with much ceremony. The chiefs and magi are seated in front of their people, puffing smoke from their pipes, and thanking the Master of Life, with such expressions as "How-wa-conda," "Thanks master of Life,"—"[illegible]-pa-ne-nah-pe-e-wa-ra-ta-cum-he-ra,"—"Thank you, Master of Life, here is smoke, I am poor, hungry, and want to eat." The hunters draw near to the chiefs and magi, and in a low tone of voice inform them of the discovery of bisons. They are questioned as to the number, and reply by holding up to the view some small sticks in a horizontal position, and comparing one herd at a greater distance with this stick, and another with that, &c.

It is then the business of some old man or crier, to harangue the people, informing them of the discovery, requesting the squaws to keep in good heart, telling them they have endured many hardships with fortitude, that there is now a termination to their difficulties for the present, and that on the morrow the men will go in pursuit of the bisons, and without doubt bring them plenty of meat.

On all occasions of public rejoicings, festivals, dances, or general hunts, a certain number of resolute warriors are pre-

The ceremony of smoking being performed, the word for starting is given by Ongpatonga. They immediately separate into two bands, who pass in full speed to the right and left, and perform a considerable circuit, with the object of enclosing the herd, at a considerable interval, between them.

They then close in upon the animals, and each man endeavours to kill as many of them as his opportunity permits.

It is upon this occasion, that the Indians display their horsemanship, and dexterity in archery. Whilst in full run they discharge the arrow with an aim of much certainty, so that it penetrates the body of the animal behind the shoulder. If it should not bury itself so deeply as they wish, they are often known to ride up to the enraged animal, and withdraw it. They observe the direction and depth to which the arrow enters, in order to ascertain whether or not the wound is mortal, of which they can judge with a considerable degree of exactness; when a death wound is inflicted, the hunter raises a shout of exultation, to prevent others from pursuing the individual of which he considers himself certain. He then passes in pursuit of another, and so on, until his quiver is exhausted, or the game has passed beyond his further pursuit.

The force of the arrow, when discharged by a dexterous and athletic Indian, is very great, and we were even credibly informed, that under favourable circumstances, it has been known to pass entirely through the body of a bison, and actually to fly some distance, or fall to the ground on the opposite side of the animal.

Notwithstanding the apparent confusion of this engagement, and that the same animal is sometimes feathered by arrows from different archers, before he is despatched, or considered mortally wounded, yet as each man knows his own arrows from all others, and can also estimate the nature of the wound, whether it would produce a speedy death to the animal, quarrels respecting the right of property in the prey seldom occur, and it is consigned to the more fortunate individual, whose weapon penetrated the most vital part.

The chase having terminated, each Indian can trace back his devious route to the starting place, so as to recover any small article he may have lost.

This surrounding chase, the Omawhaws distinguish by the name of Ta-wan-a-sa.

A fleet horse well trained to the hunt, runs at the proper distance, with the reins thrown upon his neck, parallel with the bison, turns as he turns, and does not cease to exert his speed until the shoulder of the animal is presented, and the fatal arrow is implanted there. He then complies with the motion of his rider, who leans to one side, in order to direct his course to another bison. Such horses as these are reserved by their owners exclusively for the chase, and are but rarely subjected to the drudgery of carrying burdens.

When the herd has escaped, and those that are only wounded or disabled are secured, the hunters proceed to flay, and cut up the slain.

Formerly, when the chiefs possessed a greater share of power than they now do, one of them would advance towards a carcase, which struck his fancy, either from its magnitude or fatness, and the rightful owner would relinquish it to him without a word; but they now seldom put the generosity of the people thus to the test.

Some individual will usually offer his bison to the medicine, either voluntarily, or at the request of a chief, and on the succeeding day, it is cooked, and all the distinguished men are invited to partake of the feast.

In the operation of butchering, a considerable knowledge of the anatomical structure of the animal is exhibited, in laying open the muscles properly, and extending them out into the widest and most entire surfaces, by a judicious dissection.

If they are much pressed by hunger, they in the first place open the flank, in order to obtain the kidneys, which are then eaten without waiting for the tardy process of culinary preparation.

A hunter, who has been unsuccessful, assists some one in skinning and cutting up, after which he thrusts his knife in the part he wishes for his own share, and it is given to him.

If the squaws should arrive, the knife is resigned to them, whilst the men retire a short distance from the scene, to smoke, and rest themselves.

The slaughtered animals are chiefly and almost exclusively cows, selected from the herd; the bulls being eatable only in the months of May and June.

Every eatable part of the animal is carried to the camp, and preserved, excepting the feet and the head; but the brains are taken from the skull for the purpose of dressing the skin, or converting it into Indian leather. Those skins which are obtained during this season are known by the name *Summer skins*, and are used in the construction of their skin lodges, and for their personal clothing for summer wear.

Three squaws will transport all the pieces of the carcase of a bison, excepting the skin, to the camp, if the latter is at any moderate distance. And it is their province to prepare the meat, &c. for keeping.

The vertebræ are comminuted, by means of stone axes, similar to those which are not unfrequently ploughed up out of the earth in the Atlantic states; the fragments are then boiled, and the rich fat, or medulla, which rises, is carefully skimmed off and put up in bladders for future use. The muscular coating of the stomach is dried; the smaller intestines are cleaned and inverted so as to include the fat, that had covered their exterior surface, and then dried; the larger intestines, after being cleaned, are stuffed with meat, and cooked for present eating.

The meat, with the exception of that of the shoulders or *hump*, so called, is then dissected with much skill into large thin slices, and dried in the sun, or jerked over a slow fire, on a low scaffold.

The bones of the thighs, to which a small quantity of flesh is left adhering, are placed before the fire until the meat is sufficiently roasted, when they are broken, and the meat and marrow afford a most delicious repast. These, together with the tongue and hump, are esteemed the best parts of the animals.

The meat, in its dried state, is closely condensed together into quadrangular packages, each of a suitable size, to attach conveniently to one side of the packsaddle of a horse. The dried intestines are interwoven together into the form of mats, and tied up into packages of the same form and size. They then proceed to *cache*, or conceal in the earth these acquisitions, after which they continue onward in pursuit of other herds of their favourite animal.

The nation return towards their village in the month of August, having visited for a short time the Pawnee villages, for the purpose of trading their guns for horses.

They are sometimes so successful, in their expedition, in the accumulation of meat, as to be obliged to make double trips, returning about mid-day for half the whole quantity, which was left in the morning. When within two or three days journey of their own village, runners are dispatched to it, charged with the duty of ascertaining the safety of it, and the state of the maize.

On the return of the nation, which is generally early in September, a different kind of employment awaits the ever industrious squaws. The property buried in the earth is to be taken up and arranged in the lodges, which are cleaned out, and put in order. The weeds which during their absence had grown up, in every direction through the village, are cut down and removed.

A sufficient quantity of sweet corn is next to be prepared, for present and future use. Whilst the maize is yet in the milk or soft state, and the grains have nearly attained to their full size, it is collected, and boiled on the cob; but the poor who have no kettles, place the ear, sufficiently guarded by its husk in the hot embers, until properly cooked; the maize is then dried, shelled from the cob, again exposed to the sun, and afterwards packed away for keeping, in neat leathern sacks. The grain prepared in this manner has a shrivelled appearance, and a sweet taste whence its name. It may be boiled at any season of the year, with nearly as much facility as the recent grain, and has much the same taste.

They also pound it into a kind of small hominy, which when boiled into a thick mush, with a proper proportion of the smaller entrails, and jerked meat, is held in much estimation.

When the maize, which remains on the stalk, is fully ripe, it is gathered, shelled, dried, and also packed away in leathern sacks. They sometimes prepare this hard corn for eating, by the process of *lying* it, or boiling it in a ley of wood ashes, for the space of an hour or two, which divests it of the hard exterior skin, after which it is well washed and rinsed. It may then be readily boiled to an eatable softness, and affords a palatable food.

The hard ripe maize is also broken into small pieces between two stones, one or two grains at a time, the larger stone being placed on a skin, that the flying fragments may not be lost. This coarse meal is boiled into a mush called *We-ne-ah.* It is sometimes parched previously to being pounded, and the mush prepared from this description of meal, is distinguished by the term *We-jun-ga.* With each of these two dishes, a portion of the small prepared intestines of the bison, called *Ta-she-be* are boiled, to render the food more sapid.

Their pumpkins, *Wat-tong*, are boiled or rather steamed, as the pot is filled with them cut in slices, with the addition of a very small quantity of water. But the greater number of these vegetables, are cut into long slips, and, as well as the smaller intestines, and stomach of the bison cut in pieces, are interwoven as before mentioned into a kind of net work.

A singular description of food is made use of by some tribes of the Snake Indians, consisting chiefly and sometimes wholly of a species of ant, (*Formica Lin.*) which is very abundant in the region in which they roam. The squaws go in the cool of the morning to the hillocks of these active insects, knowing that then they are assembled together in the greatest numbers. Uncovering the little mounds to a certain depth, the squaws scoop them up in their hands, and put them into a bag prepared for the purpose. When a sufficient number are obtained, they repair to the water, and cleanse the mass from all the dirt and small pieces of wood, collected with them. The ants are then placed upon a flat stone, and by the pressure of a rolling-pin, are crushed together into a dense mass, and rolled out like pastry. Of this substance a soup is prepared, which is relished by the Indians, but is not at all to the taste of white men. Whether or not this species of ant, is analogous to the *Vachacos*, which Humboldt speaks of, as furnishing food to the Indians of the Rio Negro and the Guainia, we have no opportunity of ascertaining.

We could not learn, that any one of the nations of the Missouri Indians, are accused even by their enemies of eating human flesh, from choice, or for the gratification of a horrible luxury; starvation alone can induce them to eat of it. An Ioway Indian, however, having killed an Osage, compelled some children of his own nation to eat of the uncooked flesh of the thigh of his victim. And a Sioux of the St. Peter's dried some of the flesh of a Chippeway whom he had killed, and presented it to some white men, who ate it without discovering the imposition.

The Indians like the Hottentots, negroes and monkeys, eat the lice which they detect in each others heads. The squaws search for these parasites, and we have often seen them thus occupied with activity, earnestness and much success. One of them who was engaged in combing the head of a white man, was asked why she did not eat the vermin, she replied that "white man's lice are not good."

Although the Bison cow produces a rich milk, yet the Indians make no use of that of the individuals they kill in hunting.

During these active employments which the squaws cheerfully and even emulously engage in, the occupations of the men are chiefly those of amusement or recreation.

Numbers of the young warriors are very officious in offering their services to the squaws, as protectors during their field labours, and from the opportunities they enjoy of making love to their charge in the privacy of high weeds, it is extremely common for them to form permanent attachments to the wives of their neighbours, and an elopement to another nation is the consequence.

The men devote a portion of their time to card-playing. Various are the games which they practise, of which one is called *Matrimony*, but others are peculiar to themselves; the following is one, to which they seem to be particularly devoted.

The players seat themselves around a bison robe spread on the ground, and each individual deposits in the middle, the articles he intends to stake, such as vermillion, beads, knives, blankets, &c. without any attention to the circumstance of equalizing its value, with the deposits made by his companions.

Four small sticks are then laid upon the robe and the cards are shuffled, cut, and two are given to each player, after which the trump is turned. The hands are then played, and whoever gains two tricks, takes one of the sticks. If two persons make each a trick, they play together until one loses his trick, when the other takes a trick. The cards are again dealt, and the process is continued until all the cards are taken. If four persons have each a trick, they commence to play to the exclusion of the unsuccessful personages. When a player wins one trick, four cards are dealt to him, that he may take his choice of them. If a player wins three tricks, six cards are dealt to him, and should he take the fourth trick he wins the stake.

They are so inveterately attached to the heinous vice of gambling, that they are known to squander in this way, every thing they possess, with the solitary exception of their habitation, which, however, is regarded more as the property of the woman, than of the man.

A game to which the squaws are very much devoted is called by the Omahas *Kon-se-ke-de* or plumstone shooting. It bears some resemblance to that of dice. Five plumstones are provided, three of which are marked on one side only with a greater or smaller number of black dots or lines, and two of them are marked on both sides. They are, however, sometimes made of bone, of a rounded and flattened form, somewhat like an orbicular button mould, the dots in this case being impressed. A wide dish and a certain number of small sticks by the way of counters are also provided. Any number of persons may play at this game, and apparently to the number engaged in it, is the quantity of goods at adventure. The plumstones or bones are placed in the dish, and a throw is made by simply jolting the vessel against the ground to cause the dice to rebound, and they are counted as they lie when they fall. The party plays around for the first throw. Whoever gains all the sticks in the course of the game, wins the stake. The throws succeed each other with so much rapidity, that we vainly endeavoured to observe their laws of computation, which it was the sole business of an assistant to attend to.

The squaws, sometimes, become so highly interested in this game, as to neglect their food and ordinary occupations, sitting for a whole day, and perhaps night also, solely intent upon it, until the losers have nothing more to stake.

Having now a plentiful store of provisions, they content themselves in their village until the latter part of October, when, without the formality of a council, or other ceremony, they again depart from the village, and move in separate parties to various situations on both sides of the Missouri, and its tributaries, as far down as the Platte.

Their primary object at this time, is to obtain, on credit from the traders, various articles, indispensably necessary to their fall, winter, and spring hunts; such as guns, particularly those of *Mackinaw*, powder, ball, and flints, beaver traps, brass, tin, and camp-kettles, knives, hoes, squaw-axes and tomahawks.

Having obtained these implements, they go in pursuit of deer, or apply themselves to trapping for beaver and otter. Elk was some time since an object of pursuit, but these animals are now rather rare, in the Omawhaw territories.

This hunt continues until towards the close of December, and during the rigours of the season, they experience an alternation of abundance, and scarcity of food. The men are very much exposed to the cold, and, in trapping, to the water. They are also frequently obliged to carry heavy burdens of game from considerable distances.

The assiduous hunter often returns to his temporary residence in the evening, after unsuccessful exertions continued the live-long day; he is hungry, cold, and fatigued, with his mockasins, perhaps, frozen on his feet. His faithful squaw may be unable to relieve his hunger, but she seats herself by his side near the little fire, and after having disposed of his hunting apparatus, she unties his mockasins and leggings, and pulls them off, that he may be comfortable; she then gives him water to drink, and his pipe to smoke. His children assemble about him, and he takes one of them upon his knee, and proceeds to relate to it the adventures of the day, that his squaw may be informed of them. "I have been active all day, but the Master of Life has prevented me from killing any game, but never despond, my children and your mother, I may be fortunate to-morrow." After some time, he retires to rest, but the wife remains to dry his clothing. He often sings until midnight, and on the morrow, he again sallies forth before the dawn, and may soon return with a superabundance of food. Such is the life of the Indian hunter, and such the privations and pleasures, to which his being is habitually incident.

The squaws, in addition to their occupation of flaying the animals which their husbands entrap, and of preparing and preserving the skins, are often necessitated to dig the Pomme de terre, *Noo*; and to scratch the ground-pea, *Hinbaringa*, (the same word is also applied to the bean,) from beneath the surface of the soil. This vegetable is produced on the roots of the *Apios tuberosa*, they also frequently find it hoarded up, in the quantity of a peck or more in the brumal retreats of the field mouse, (*Mus agrarius*, *Var?*) for its winter store. The seeds of the nelumbium luteum, analogous to the sacred bean of the Bramins, also contribute to their sustenance; these are distinguished by the name *Terow-a*, or bison-beaver, (*Te* bison, and *row-a*, beaver, in the Oto dialect,) and when roasted are much esteemed. The root of this plant is also an article of food during the privations of this portion of the year; it is either roasted or boiled; and is prepared for keeping by boiling, after which it is cut up in small pieces and dried; in taste it is somewhat similar to the sweet potatoe.

With the skins of the animals, obtained during this hunt, the natives again repair to the traders, to compensate them for the articles which they had obtained on credit. But owing to the intrigues of rival traders, the Indians are, with, however, numerous exceptions, not remarkable for any great degree of punctuality in making their returns to cancel their debts. Many obtain credit from one trader, and barter their peltries with another, to the great injury of the first.

Like genuine traders, the Omawhaws, endeavour, by various subterfuges, to make the best of their market. An artful fellow will assure a trader that he has a number of skins, but that he does not wish to bring them forward, until he assembles a still greater number; but, in the meantime he must have a keg of whiskey, otherwise he will barter his skins with another trader. Another knave owes his trader, perhaps, twenty skins; but in consequence of the unlucky occurrence of many circumstances, which he proceeds to particularize, he can at present pay but half that number, and the other ten, which he brings with him, he wishes to trade for other articles of merchandize. The trader submits to the imposition thus practised, rather than lose their custom, and is thus deservedly punished, for his own deceptive proceedings with respect to his rivals, and for the habit of practising on the ignorance of the natives, in which many of them freely indulge.

Thus the Missouri traders are repaid for hardly more than half the value of the merchandize which they credit; but should they obtain peltries for one third of the amount, they clear their cost and charges.

After having discharged their debts wholly, or in part, the Indians exchange the remainder of their skins, for strouding for breech clouts and petticoats, blankets, wampum, guns, powder and ball, kettles, vermillion, verdigris, mockasin awls, fire steels, looking glasses, knives, chiefs' coats, calico, ornamented brass finger rings, arm bands of silver, wristbands of the same metal, ear-wheels and bobs, small cylinders for the hair, breast broaches, and other silver ornaments for the head; black and blue handkerchiefs, buttons, tin cups, pans and dishes, scarlet cloth, &c.

The man is the active agent in this barter, but he avails himself of the advice of his squaw, and often submits to her dictation.

Each nation of Indians practises every art they can devise, to prevent white traders from trafficking with their neighbours, in order to engross as much as possible of the trade themselves, and to be the carriers at second hand to the others. For this purpose they sometimes intrigue deeply, and resort to artful expedients. "You do not treat your traders as we do," said a cunning Oto to some Pawnees, "we dictate to them the rate of exchanges, and if they persist in refusing to comply, we use force to compel them; we flog them, and by these means we obtain our articles at a much lower rate than you do"—thus endeavouring to induce those people to banish traders from their village by ill treatment.

In trade the largest sized beaver skin is called by the French a *plus*, and constitutes the chief standard of value. Thus as many of any other description of skins, as are considered of equal value with this large beaver skin, are collectively denominated a *plus*, and the number of deer, raccoon, otter, &c. that shall respectively constitute a plus, is settled between the parties, previously to the commencement of the exchanges.

Brass kettles are usually exchanged for beaver skins, pound for pound, which weight of the latter is worth about three dollars at St. Louis

The beaver skins are embodied into neat packs by the traders, each weighing one hundred pounds, and consisting of seventy or eighty skins according to their magnitude.

The business of this hunt having terminated with the year, the Omawhaws return to their village, in order to procure a supply of maize from their places of concealment, after which they continue their journey, in pursuit of bisons.

On this occasion they divide into two parties, one of which ascends the Missouri, and the other the Elk-horn rivers. The party which discovers a herd, gives notice of the fact to the other party, by an especial messenger, and invites them to join in the pursuit of it.

This expedition continues until the month of April, when they return to their village as before stated, loaded with provisions.

It is during this expedition that they procure all the skins, of which the bison robes of commerce are made; the animals at this season having their perfect winter dress, the hair and wool of which are long and dense.

The process of preparing the hides for the traders falls to the lot of the squaws. Whilst in the *green* state they are stretched and dried as soon as possible, and, on the return of the nation to the village, they are gradually dressed during the intervals of other occupations. The hide is extended upon the ground; and with an instrument resembling an adze, used in the manner of our carpenters, the adherent portions of dried flesh are removed, and the skin rendered much thinner and lighter than before. The surface is then plastered over with the brains or liver of the animal which have been carefully retained for the purpose, and the warm broth of meat is also poured over it. The whole is then dried, after which it is again subjected to the action of the brains and broth, then stretched in a frame, and while still wet, scraped with pumice-stone, sharp stones, or hoes, until perfectly dry. Should it not yet be sufficiently soft, it is subjected to friction, by pulling it backwards and forwards over a twisted sinew. This generally terminates the operation. On the commencement of the process, the hides are almost invariably each divided longitudinally into two parts, for the convenience of manipulation, and when finished they are again united by sewing with sinew. This seam is almost always present in the bison robe, but one of the largest that we have seen, is used as a covering for one of our humble beds at this cantonment, and has been dressed entire, being entirely destitute of a seam.

The brain of an animal, is sufficient to dress its skin, and some persons make two thirds of it suffice for that purpose.

The skins of the elk, deer, and antelopes are dressed in the same manner, but those that are intended to form the covering of their travelling lodges, for leggings, and summer mockasins, &c. have the adze applied to the hairy side in dressing, instead of the flesh side.

Great numbers of these robes, are annually purchased by the traders, and Mr. Lisa assured us, that he once transported fifteen thousand of them to St. Louis in one year.

The Indian form of government is not sufficiently powerful, to restrain the young warriors from the commission of many excesses and outrages, which continually involve the nations in protracted wars; and, however well disposed the chiefs may be, and desirous to maintain the most amicable deportment towards the white people, they have not the power to enable them to compel those restless spirits, greedy of martial distinction, to an observance of that pacific demeanour, which their precepts inculcate.

To accomplish this object, much depends upon the course pursued by the agents of the United States. If the character of these is dignified, energetic and fearless, they will certainly meet that respect from the natives, which is due to the importance of their missions. But, on the contrary, if their conduct is deficient in promptness, energy and decision; if their measures are paralyzed by personal fear of the desperadoes, whom they must necessarily encounter in the execution of their duties, their counsels will fall unheeded in the assemblies which they address.*

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* In corroboration of these remarks, we add the following account of an interview which Major O'Fallon had with Indians of the Mississippi,† whose agent has been hitherto unable to restrain them *from* carrying on warlike operations, against the Missouri Indians.

In St Louis on the 3d April 1821, B. O'Fallon, agent for Indian affairs on Missouri, met a deputation from the Saukee nation of Indians, on the subject of a most destructive war, carried on by them against the Otoes, Missouries, and Omawhaws of his agency, and spoke to them as follows:

SAUKEES—

I am glad you have arrived, before my departure for the Council Bluff, as it affords me an opportunity to address you, on a subject that has

† Of the Sauk nation, they call themselves Sauke-waw-ke.

The power of some of the former rulers of the Omawhaws is said to have been almost absolute. That of the celebrated Black-bird *Wash-ing-guh-sah-ba*, seems to have been actually so, and was retained undiminished until his death, which

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agitated my mind for some time past. Yes, Saukees, for some time past I have wished to speak to you on a subject, that even now makes the blood run warm in my veins.

In addressing you upon this important subject, I shall not speak to please your ears, but to strike your hearts.

Saukees, you must recollect to have seen me frequently, but you do not know me, and I know you well—I recollect when I first visited your land, your balls whistled round my ears. I was then a boy and wished to be a man—I am now a man, with a heart as strong as my strength—

A few winters since, I was a chief to the red skins of the upper Mississippi, (Sioux and Foxes.) I am now chief to the red skins of Missouri, some of whose blood you have spilt. Listen that you may hear me, dispose your minds to understand me, and remember well what I am going now to tell you, and carry my words to your nation—that they may not deceive themselves.

When I first climbed the rapid Missouri, I found the red skins as wild as wolves. Without ears they roved through the plains, only thirsting for each others' blood—They could only see the storm as it gathered around them. They could only see the clouds when they obscured the sun, and hear it thunder when it rained. But when I sat down on their land, they assembled around me, they listened to my words, I settled the difference that existed between them, and gave peace to the land. They then sat down to rest, but they could not rest long for the Saukees of the Mississippi, you, whom the Big Knives, like fools have suffered to live, came and disturbed them in their sleep. When disturbed, not like women did they mourn their misfortunes, but like men they rose in arms and came to me; I did not consult my feelings, I consulted the feelings of my nation, and I was for peace—I told them to sit down, and they did so. Keep your ears open that you may hear me, and raise your eyes that you may see me, for I have saved your blood—Yes, Saukees I restrained their arms, and they sat down in tears—But you were not satisfied, you presumed upon their forbearance, and came again, but they were not asleep; and you did not spill their blood, but you stole their horses; you stole horses from the whites, who like fools had still suffered you to live, and you murdered some traders, who were also white. They again raised their arms, every body who were there at the time, both whites and red skins, raised their arms, and looked around them, but they could not see you, for like the timid wolf you had sought the wood, where they could not follow you, until they had consulted me. I, whose blood began to boil in my veins. Saukees, my heart was for war, but my nation was too much for peace, and it was my business to promote peace; therefore, I gave them some tobacco, and told them once more to sit down, and endeavour to restrain their feelings; they did so, and I left them smoking their pipes, and came away to see the great American Chief. After I left them, you returned again to their land; you found them asleep, you stole their horses, murdered their women and children, took their scalps, and carried some of them prisoners to your villages.—

occurred in the year 1800, of the small pox, which then almost desolated his nation. Agreeably to his orders, he was interred in a sitting posture, on his fovourite horse, upon the summit of a high bluff of the bank of the Missouri, "that he

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How long, how long, Saukees, will you continue to disturb the repose of other nations. How long will you, (like the serpent creeping through the grass,) continue to disturb the unsuspecting stranger passing through your country—Be cautious how you disturb the red skins of Missouri, or your women and children shall mourn the loss of husbands and fathers—Husbands and fathers shall mourn the loss of wives and children.

Yes, Saukees, the Otoes, Missouries, and Omawhaws, are unwilling to be disturbed any longer. They will no longer suffer you to make slaves of their children, and dance their scalps in your villages.

Saukees, be cautious, you live in the woods, and the game of your country is nearly exhausted. You will soon have to desert these woods, in which the red skins of Missouri can't find you, and follow the buffaloe in the plains, where the red skins are not less brave than you, and as numerous as the buffaloe.—As long as you have the wood to conceal your warriors, you may continue to disturb the women and children of Missouri; but when hunger drives you from these woods, your bodies will be exposed to balls, to arrows, and to spears. You will only have time to discharge your guns, before on horseback, their spears will spill your blood. I know that your guns are better than those of Missouri, and you shoot them well—But when you reach the prairies, they will avail you nothing against the Otoes, Missouries, Omawhaws, and Pawnees—As you have seen the whirlwind break and scatter the trees of your woods, so will your warriors bend before them on horseback—(Here B. O'Fallon paused, to give the Saukees an oportunity to reply, when one of their most distinguished partizans, rose and spoke with energy and animation, recounting many of his feats in war. He mentioned how often he had struck upon the tribes of Missouri, and that the Otoes had killed his brother, whom he loved as a father, and whose spirit could not be appeased as long as an Oto walked erect upon the earth. He also spoke of the difficulty of restraining his young warriors, who were unwilling to die in obscurity.—To which B. O'Fallon spoke to the following effect.

Saukees! One of your partizans, forgetting to whom he was speaking, has had the presumption to recount his feats in war, how often he had struck the red skins of Missouri, and to insinuate that he was unwilling to restrain his young men—I believe him to be a man of sense, but he has spoken without reflection, he has spoken like a *fool*.

Saukees! It has always been, and still is my business to prevent, (if possible,) the effusion of human blood—to give peace and happiness to the land—but when I can't stop the running of blood, I will *probe* the wound, and make it run more fast.

I wish you to understand that the Otoes and Missouries, though *few* in number, and much exposed, *do not beg for peace*, and I do not ask it for them. They have not as yet revenged the *death* of some of their murdered countrymen, the spirits of those dead are not satisfied—No Saukees! These red skins whom you persecute, have opened their ears to my words, and are constantly looking towards me. They do not wish a dishonourable peace. I would sooner see you drink their blood, than suffer them to might continue to see the white people ascending the river, to trade with his nation." A mound was raised over his remains, on which food was regularly placed for many years afterwards; but this rite has been discontinued, and the staff,

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make a dishonourable peace—You have a few of their children as prisoners among you; if you consult the interest of your nation, you will send them to their mothers. If you do not deliver them up, the red skins of Missouri will go after them, and in hunting them, they may find some of yours.

I tell you to be cautious, Saukees, how you disturb the red skins of Missouri. They call themselves my children, be cautious how you disturb my children, or I will no longer look to the pacific disposition of my nation, but consult my own feelings, and probe the wound which I cannot heal.

I am not like many white chiefs whom you have been accustomed to see. I never act an humble part, I am one of those white men, who never fear a red skin—when I move amongst them, it is not like a dog with his tail between his legs, but as becomes a man, and when I speak, I feel the strength of my nation.

On the Missouri, I have guns, powder and balls, blankets, strouds cloths, and leggings, and I am now getting more; I know where you have your village, and I know the face of the country over which you stretch your limbs. I know how, and where you are scattered on hunting excursions—I know where you are most exposed, and what I do not know, I can easily learn from the whites, and other red skins of the Mississippi.

I have every thing that a red skin wants, and you all know he wants only the means of war. You know that all red skins are fond of war, and that I can make brother fight brother.

Saukees! You are a strong nation of red skins, but if you dont endeavour to restrain the ungovernable disposition of some of your young men, they will expose your hearts in the midst of your strength.

You, Saukees, be cautious how you offend me, lest I assemble an army of red skins, and from some high peak on Missouri, show them where to find your villages, and your exposed and scattered lodges. I know that the red skins of Missouri cannot destroy you directly, but they can give you unpleasant dreams—Be cautious, Saukees, how you deceive yourselves, or suffer others to deceive you, or the day will come when some of your children will have the misfortune to behold the dogs fighting over the bones of their fathers upon this land, and as I may have many years to live, I dont intend to sit still, and if I continue to increase in strength as I have done, I may live to see the day, when I can make you smile, or shed tears of blood—Saukees, I have done, I am going to the Council Bluff.

The Chief of the Saukees, after consulting each warrior separately, replied, (in substance) as follows.

American Chief. I have been attentive, and I have heard your words, and those of the red head (Gov. Clark.) Yours entered one ear and his the other, they shall not escape until my nation hears them—I feel the truth of all you have said, and have never been more for peace than now—All these braves have expressed their wish for peace, with the red skins of Missouri. This partizan, who without reflection spoke exultingly of his feats, since he has heard your words, is also for peace, and from any fear of those that, on its summit, supported a white flag, has no longer existence.

This chief appears to have possessed extraordinary mental abilities, but he resorted to the most nefarious means, to establish firmly the supremacy of his power. He gained the reputation of the greatest of medicine men, and his medicine, which was no other than arsenic itself, that had been furnished him for the purpose, by the villainy of the traders, was secretly administered to his enemies or rivals. Those persons who offended him, or counteracted his views, were thus removed agreeably to his predictions, and all opposition silenced, apparently by the operation of his potent spells.

Many were the victims to his unprincipled ambition, and the nation stood in awe of him, as of the supreme arbiter of their fate.

With all his enormities he was favourable to the traders, and although he compelled them to yield to him one half of their goods, yet he commanded his people, to purchase the remainder at double prices, that the trader might still be a gainer.

He delighted in the display of his power, and, on one occasion, during a national hunt, accompanied by a white man, they arrived on the bank of a fine flowing stream, and although all were parched with thirst, no one but the white man, was permitted to taste of the water. As the chief

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whom he has lied, but from an unwillingness to displease you, whom he conceives to be a man of truth.

At our village on Rock river, and encampment at the De Moyen, we have five Oto prisoners, whom I will promise to deliver up, when you send for them.

My brother,—I only regret that my nation was not present on this occasion, to have heard your words. The wisdom of my nation, all the reflecting men are for peace, but we have many young men difficult to restrain, whose ears, (I believe,) would open to words coming from your mouth, when mine, for the want of strength, may fail.

My brother,—I wish you to pause—I wish you to forbear until I disclose your words to my people, and you hear from them.

My brother, we receive you as the son of the red *head*, and in as much as we love him, we love you, and do not wish to offend you.

thought proper to give no reason for this severe punishment, it seemed to be the result of caprice.

One inferior but distinguished chief called *Little Bow*, at length opposed his power. This man was a warrior of high renown, and so popular in the nation, that it was remarked of him, that he enjoyed the confidence and best wishes of the people, whilst his rival reigned in terror. Such an opponent could not be brooked, and the Black Bird endeavoured to destroy him.

On one occasion the Little Bow returned to his lodge, after the absence of a few days on an excursion. His wife placed before him his accustomed food; but the wariness of the Indian character, led him to observe some peculiarity in her behaviour, which assured him that all was not right; he questioned her concerning the food she had set before him, and the appearance of her countenance, and her replies, so much increased his suspicions, that he compelled her to eat the contents of the bowl. She then confessed, that the Black Bird had induced her to mingle with the food a portion of his terrible medicine, in order to destroy him. She fell a victim to the machination of the Black Bird, who was thus disappointed of his object.

With a band of nearly two hundred followers, the Little Bow finally seceded from the nation, and established a separate village on the Missouri, where they remained until the death of the tyrant.

On one occasion, the Black Bird seems to have been touched by remorse, or perhaps by penitence, in his career of enormity. One of his squaws having been guilty of some trifling offence, he drew his knife in a paroxysm of rage, and stabbed her to the heart. After viewing her dead body a few moments, he seated himself near it, and covering his face with his robe, he remained immoveable for three days, without taking any nourishment. His people vainly petitioned that he would "have pity on them," and unveil his face; he was deaf to all their remonstrances, and the opinion prevailed that he intended to die through starvation. A little child was at length brought in by its parent, who gently raised the leg of the chief, and placed the neck of the child beneath his foot. The murderer then arose, harangued his people, and betook himself to his ordinary occupations.

Towards the latter part of his life, he became very corpulent, the consequence of indolence and repletion. He was transported by carriers, on a bison robe, to the various feasts to which he was daily invited, and should the messenger find him asleep, they dared not to awaken him by a noise or by shaking, but by respectfully tickling his nose with a straw.

The successor of Black Bird was the Big Rabbit, *Mush-shinga.* He possessed considerable authority, but he lived only a few years to enjoy it.

Ta-so-ne or the White Cow, the hereditary successor of Mush-shinga, being governed by an unambitious wife, remained inactive, whilst the next important man *Ong-pa-tonga* or the Big Elk, more distinguished for his vigorous intellect, than for any martial qualities, attained to the supreme dignity, which he still retains.

The power of this amiable and intelligent chief, was very considerable during the early part of his administration, and although not so absolute as his predecessors, yet it is believed, that he could then inflict the punishment of death upon an individual, with his own hands, with impunity. Five years ago he informed a stranger in the presence of his people, that he could compel any one of them to lie down before him, that he might place his foot upon his neck; this assertion was assented to by his hearers.

But the influence of the grand chief of the Omawhaws has very much diminished, in consequence of the improper distribution of medals by the whites; so that, although one of the most intelligent leaders, that the nation has probably ever had, yet he could hardly do more at this time, than inflict a blow for the most serious offence. Still, however, he maintains a supremacy over six or seven medalled rivals, in despite of the intrigues of the traders. He does not now attempt to coerce any of his people, but substitutes advice, and persuasion.

By his influence and pacific councils, he has rendered the Omawhaws a peaceful people, who limit their warfare to the punishing of war parties, that depredate on them or their possessions, and he exultingly affirms, that his hands are unstained with the blood of white men.

CHAPTER XI.

Further account of the Omawhaws—Of their marriages—of infancy, and the relationship of parents and children—Their old age.

In the Omawhaw nation, numbers of the females are betrothed in marriage from their infancy; and as polygamy is extremely common, the individual who weds the eldest daughter, espouses all the sisters successively, and receives them into his house when they arrive at a proper age.

During her early youth, the daughter continues under the control of her parents, with whom she resides, and donations are occasionally made to her by the lover, which are received by the parents, and appropriated to their own use, if the addresses of the individual are favourably received; but should an alliance with him, or with his family not be desirable, his presents are rejected, and the application is not renewed.

Between the age of nine and twelve years, the young wife, is occasionally an invited visitant at the lodge of her husband, in order that she may become familiarized with his company and his bed. But her permanent residence is still at the house of her parents, where she continues until the age of thirteen or fourteen, when the parents give notice to their son-in-law, that their daughter is of sufficient age to partake of his bed. The husband then receives his bride without any formality, and leaving his other wives at home, departs with her upon a journey of a few days, during which time the marriage is consummated. On their return, the young wife again dwells in the lodge of her parents, occasionally visited by her husband, until a general hunt calls the nation from the village.

During this hunt the husband again takes possession of his bride, whose parents constantly pitch their lodge near that of the son-in-law.

The husband, previously to introducing his new wife to his lodge, endeavours to obtain the consent of his other wives; for this purpose, he speaks kindly to them, states the necessity of providing them with a helpmate, to alleviate their burthens, and thus succeeds in his wishes.

The new matrimonial alliance is at first productive of no discord in the family, but at length the decided partiality, displayed by the husband in favour of his recent acquisition, engenders much jealousy in the minds of his elder wives. Quarrels often succeed, which are sometimes terminated by the natural weapons of the wives, who, after the liberal use of their voluble tongues, apply for more strenuous aid to the agency of their teeth and nails, or to the somewhat more formidable array of tomahawks, clubs, and missiles.

During combats of this nature, the husband remains perfectly neutral, sitting with his robe drawn over his head. Should the wives succeed in expelling the recent intruder, who takes refuge in the house of her parents, the husband endeavours to sooth their anger, and to point out to them the impropriety of their conduct.

A lecture of this description, to women elated with victory, is not always received in the same conciliatory disposition, with that which dictated the advice, but sometimes results in another quarrel, which is terminated by the administration of a few blows on the persons of his refractory squaws. These will then depart from his lodge, declaring their determination to live with him no longer; a resolution which, however, fails with their anger, and they seek a reconciliation. Their friends apply to the husband in their favour, and are informed that he was angry when he flogged them, and that he is now sorry for it. Thus matters are, with but little difficulty, adjusted; the wives return home and are harangued by the husband, after which they proceed harmoniously together in their domestic employments, until some new feud arises, to disturb the repose of the family.

On the general hunting expeditions, in which the nation separates into distinct bands, the husband takes with him, his favourite wife, whilst the others accompany the bands in which are their parents. Sometimes during a temporary encampment, the husband leaves his favourite, for a few days, on pretence of business, in order to visit one of his wives in another band. On his return, he perceives the brow of his favourite to lower with evident displeasure; if his dog approaches her, she knocks him over with a club, and her child is repulsed with violence from her side; she kicks the fire about, pulls about the bed, and exhibits other signs of anger. The husband affects not to notice her inquietude, but suffers her to proceed in her own way, until the violence of her anger appears to be in some measure dissipated; he will then perhaps, venture to request her to repair his mockasins for the morrow's hunt; "Take them to your dear wife in the other band," will most probably be the reply to his solicitation.

Such is sometimes the violence of the displeasure of his squaw, that he is obliged, through prudential motives, to take refuge in a neighbouring lodge, where he solaces himself with the pipe, until he supposes there is no longer danger of being provoked beyond endurance, so as to be tempted to chastise her; a discipline which she seems rather to solicit than avoid, that she may have a sufficient excuse for wreaking her vengeance on her rival, and for giving free vent to her sentiments and opinions upon her husband, in language of the most superlatively indecent and opprobrious nature.

When he retires to repose he invites her to his bed, but receives a positive refusal; she rolls herself in her covering alone, but generally, during the night, she becomes pacific, and a negociation ensues, which restores harmony between them.

The far greater portion of their matrimonial quarrels arise from jealousy, though many affect to treat this passion with ridicule, or with indifference.

"Were you ever jealous?" said *Sans Oreille*, an *Oto* chief, to Mr. Dougherty; "I was once fool enough to be jealous, but the passion did not long torment me; I recollected that women are often alone, their husband being necessarily often absent a hunting, and even when the husband is at home, the squaw is under the necessity of going to a distance for the purpose of bringing water, or collecting wood, when frequent opportunities occur, of being unobserved in the company of other men; and I am not so silly as to believe that a woman would reject a timely offer. Even this squaw of mine, who sits by my side, would, I have no doubt, kindly accede to the opportune solicitations of a young, handsome, and brave suitor." His squaw laughed heartily, but did not affect to repel the imputation.

Many husbands will take no cognizance, whatever, of the breach of conjugal fidelity on the part of the wife, and the offer of one of their wives for company during the night, though it might call upon our politeness for a return of thanks, was no cause of surprise to us, during our stay at their villages.*

A husband of a different temperament of mind, on detecting his wife in an adulterous act, will rarely endeavour to maim her paramour, or otherwise seriously injure him by killing his horses or dogs; but his attention will be chiefly or exclusively directed to his wife, whom he punishes by cutting off her hair, rarely her ears or nose; sometimes he resorts to a different punishment, and scarifies her face and head with his knife, after which she is repudiated, and becomes a common prostitute.

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* This national trait of extreme hospitality, with respect to the disposal of the wife, is common to many nations, in the various parts of the world: as amongst the African negroes, and the Laplanders; and, agreeably to the records of history, amongst the Romans, Spartans, and others.

An inexorable man, thus circumstanced, has been known to tie his frail partner firmly upon the earth, in the prairie, and in this situation, compelled her to submit to the embraces of twenty or thirty men successively; she is then abandoned.*

Mr. Dougherty, being in Ong-pa-ton-ga's lodge, heard the loud voice of supplication, from an unhappy father, whose daughter had been recently taken in adultery by her husband. "O great Ong-pa-ton-ga", said he, "whose nose is like that of a mule, and who art greater than the Wahconda himself, condescend to intercede for my daughter, with her cruel husband; do not permit her face to be disfigured, her nose to be cut off, or the disgrace of the punishment of the prairie, to be inflicted upon her."

A *brave*, who detected his wife in the commission of adultery, offered her no indignity, but immediately transferred her to the object of her preference, and accompanied the gift with a horse, and sundry articles of merchandize.

Even a very remote degree of consanguinity is an insuperable barrier to the marriage union. This state, on the part of the man, seems to be the result of love for the woman; on that of the squaw, of convenience, or acquiescence in the will of her parents. On some occasions, however, an Indian marries through ambitious motives; he is, for instance, aspiring to the acquisition of a particular dignity; he will then endeavour to quiet the opposition of some powerful individual, by intermarrying in his family.

Their connubial attachments are often very strong. An Omawhaw and his squaw, on a solitary hunting expedition, were discovered at a distance from their temporary lodge, by a Sioux war-party. They endeavoured to escape from the enemy, but the squaw was soon overtaken, struck to the ground, and subjected to the terrible operation of scalping. The husband, although at this time beyond the reach of the balls and arrows of the Sioux, seeing his squaw in their hands, immediately turned upon them, and drawing his knife, the only weapon he had, furiously rushed amongst them, in order to revenge the death of his squaw, even with the inevitable sacrifice of his own life; but he was almost immediately dispatched, without having accomplished his heroic purpose.

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* Very similar was the punishment of adultery at Rome, under the authority of the Emperors. The adultress was there subjected, by the process of the law, to public prostitution in the streets, with any of the spectators.

In the young squaw, the catamenia, and consequent capability for child-bearing, we were informed, takes place about the twelfth or thirteenth year, and the capacity to bear children seems to cease, about the fortieth year; but as superstitious notions prevent these Indians from taking any note of their ages, these periods are stated with some hesitation.

When the married squaw, perceives that the catamenia does not recur at the expected period, she attaches a small leathern string to her girdle, and ties a knot in it, to note the incipient state of pregnancy, and another knot is added, at the termination of each successive moon, as a register of its progress.

When the squaw perceives the approach of this depurating process, she retires from her family, and erects a little shelter of bark or grass, supported by sticks properly arranged, where she makes a fire, and cooks her victuals alone. She is thus compelled by custom, to absent herself until the expiration of four days, when she returns to her lodge. During this time she must not approach, or touch a horse, as the Indians believe that such contamination would impoverish that animal. They sometimes retire, and build their little shelter under a false pretext, when the real object is to favour the approach of some esteemed lover, to whom the vigilance of the husband has denied any other means of obtaining a stolen interview.

The squaw has no need of propitiating the goddess Manageneta, but during pregnancy, continues her usual avocations, and even in its most advanced stage, she neither bears a lighter burden on her back, nor walks a shorter distance in a day, than she otherwise would; neither does she expose herself the less on that account, to the inclemencies of the weather.

If, on a march, a pregnant woman feels the pains of parturition, she retires to the bushes, throws the burthen from her back, and without any aid, brings her infant into the world. After washing in water, if at hand, or in melted snow, both herself and the infant, she immediately replaces the burden upon her back, weighing, perhaps, between sixty and an hundred pounds, secures her child upon the top of it, protected from the cold, by an envelop of bison robe, and then hurries on to overtake her companions.

It is only at the delivery of the first child, that any difficulty is ever anticipated, and on this occasion, as there are no professed midwives, the young wife calls in some friendly matron, to assist in case of need. The aid, which these temporary midwives afford, seems to be limited to the practice of tying a belt firmly about the waist of the patient, and shaking her generally in a vertical direction, with considerable violence. In order to facilitate the birth, a vegetable decoction is sometimes administered; and the rattle of the rattle-snake is also given, with, it is said, considerable effect; the singular appendages of this animal are bruised by pounding, or comminuted by friction between the hands, mixed with warm water, and about the quantity of two segments constitutes a dose.

The art of *turning* does not appear to be known, neither is blood letting practised in their obstetrics. We heard of no case of a retention of the placenta after parturition, nor of the affection of *longing*, or of nausea of the stomach, during pregnancy.

On the delivery of her first child, the young mother, who appears to be but little enfeebled by the process, arises almost immediately, and attends to the ordinary house work; but she does not, in general, undergo any laborious occupation, such as cutting and carrying wood, until the lapse of two or three days. The second child is brought forth without difficulty, and the parent, after bathing, ties it to a board, after their usual manner, then proceeds with her daily work, as if nothing extraordinary had occurred.

Mammary abscess is very rare; a squaw of the Sioux nation died with this complaint.

Sterility, although it does occur, is not frequent, and seems to be mostly attributable to the husband, as is evinced by subsequent marriages of the squaws.

The usual number of children, may be stated at from four to six in a family, but in some families are ten or twelve. Of these the mother has often two at the breast simultaneously, of which one may be three years of age. At this age, however, and sometimes rather earlier, the child is weaned by the aid of ridicule, in which the parents are assisted by visitors.

The catalogue of the diseases, of both children and adults, probably bears a similar proportion to that of the white people, and is far less extensive and appalling. The summer complaint, so destructive to children in our region, appears to be uncommon with the Omawhaw infants, but, during their first year, they suffer more from constipation of the bowels, than from any other complaint, but which is occasionally remedied, by passing a small piece of soap (which is obtained from the traders,) cut into the proper shape, into the rectum.

Dentition seems to be productive of no great distress; the gums are never cut, but the teeth are permitted to force their way through; the shedding of the teeth is also accomplished, without much difficulty; the milk teeth, being forced out by the permanent ones, either fall from the mouth, or are gently extracted by the fingers of the parent.

Monstrous births sometimes occur, though rarely, and it is not known, that infants are ever destroyed by their parents in consequence of deformity, unless the degree of malformation is excessive. The Indians mention two monsters which were born in their village; one of these they represent as resembling a white bear; and the other a cray fish; they were both destroyed. The husband of the squaw, who gave birth to the former, said that she must have had connection with a white bear, but she asserted that the production of the monster was occasioned by a fright, which she received at seeing her husband suddenly, whilst he was personating that animal both in dress and gesture.

The magi affect to converse with the fœtus in utero, when the mother perceives it to be uneasy; they also sometimes venture to predict its sex.

Abortion is effected, agreeably to the assertions of the squaws, by blows with the clenched hand, applied upon the abdomen, or by repeated and violent pressure upon that part, or by rolling on the stump of a tree, or other hard body. The pregnant squaw is induced thus to procure abortion, in consequence of the jealousy of her husband, or in order to conceal her illicit amours, to which all the married squaws, with but few exceptions, are addicted.

The infant, when recently born, is of a reddish brown colour, but in a short time it becomes whitish, though never so pure a white, as that of the children of white people; the change to the national complexion is then gradual, and independent of exposure, inasmuch as those parts of their bodies, which are perpetually concealed from the light, change simultaneously with the face.

The abdomen of the children protrudes very considerably; and the sole article of dress, which the younger boys wear during the warm season, is a small belt of cloth around the middle of the abdomen, leaving every other part of the body perfectly naked. In wintry weather they have the addition of leggings, mockasins, and a small robe.

The female children are furnished with a short piece of cloth, in imitation of a petticoat, but destitute of a seam, belted round the loins, and depending as low as the knees. Their hair, when dressed, is parted longitudinally on the top of the head, and collected each side behind the ear, into a vertical, cylindric form, of the length of five or six inches, decorated with silver and brass rings, and ribands; the line of separation of the hair is coloured with vermillion.

This disposition of the hair into two rolls is generally observed in the girls, and is often continued one or two years after their residence with a husband.

The girl is kept in a state of considerable subjection; she habitually conforms to all the commands of the mother, and is obliged to assist her in her ordinary occupations; if she is refractory, she receives a blow upon the head or back from the hand of the mother, but hardly ever from the father. At the age of four or five years, she is taught the use of the *hoppee*, and is gradually familiarised to carry burdens. They are trained up to industry, and are taught to cut wood, to cultivate maize, to perform the scalp dance, and are early informed of the sexual relations of men and women, and warned against the arts, which will be aimed at the subjugation of their virtue.

The experienced parent, however, in addition to these salutary counsels, keeps a vigilant eye to the deportment of her unmarried daughter, and so sedulously guards her steps, that the arts of seduction, notwithstanding the free use of the licentiousness of language, appear to be more rarely triumphant over the Omawhaw maid, than over the civilized fair.

Hence, a prostitute, who has never been married, is of exceedingly rare occurrence. Yet, notwithstanding the vigilance of the parent, the daughter sometimes elopes with a favoured lover, but not until she has ascertained that his intentions are perfectly honourable.

The girl displays the most affectionate regard for her parents, and grand parents.

Whilst the deportment of the sister is thus trenched and guarded, the brother roams at large, almost uncontrolled. Should his conduct be at any time flagrantly outrageous, he will, perhaps, in the anger of his parents, receive a harsh reproof, but an ill judged affection soon prompts them to assuage his grief, and dry his tears, by presents and soothing expressions. At a very early age, he is furnished with a bow and arrows, with the use of which he delights to employ himself, that he may be qualified for a hunter and warrior.

From the age of about five years, to that of ten or twelve, custom obliges the boy to ascend to a hill top, or other elevated position, fasting, that he may cry aloud to the Wahconda. At the proper season, his mother reminds him that "the ice is breaking up in the river, the ducks and geese are migrating, and it is time for you to prepare to go in clay." He then rubs his person over with a whitish clay, and is sent off to the hill top at sunrise, previously instructed by his mother what to say, and how to demean himself in the presence of the Master of Life. From this elevation he cries out to the great Wahconda, humming a melancholy tune, and calling on him to have pity on him, and make him a great hunter, horse stealer, and warrior. This is repeated once or twice a week, during the months of March and April.

It is only when his pride is concerned, that the boy is obedient to the injunctions of his parents; on other occasions he disregards them, or replies only with ridicule. A boy in anger discharged an arrow at his mother, which penetrated her thigh; when, instead of chastising him for the act, she applauded his spirit, declaring him to be a gallant fellow, the early promise of a great warrior. But though he does not scruple thus to insult his parents, he would unhesitatingly revenge an indignity offered them by another.

He soon becomes ambitious of martial distinction, in consequence of frequently hearing the old warriors narrate their feats of arms, and eagerly anticipates the age which will justify his enrolling himself in the ranks of a war party.

At the age of twelve or thirteen, having received every instruction respecting their mode of warfare, his wishes are gratified, and he is accepted as a volunteer in the path of honour.

As an instance of high chivalric ideas, sometimes instilled into the mind of the Indian, which in some cases almost supercede the feelings of nature, and which are eminently calculated to excite a degree of enthusiasm in the youthful warrior, the following anecdote may be narrated.

The Osage nation a few years since, marched to attack the Konza village. They encamped unobserved, at a moderate distance from the village, and dispatched two of their warriors, with pipes to the Konzas, to invite all their chiefs to a pretended peace conference, and to inform them that presents of horses and merchandize would be made to them, to compensate for two individuals of their nation whom the Osages had killed.

The Konzas, suspecting the treachery intended, at first proposed to put the messengers to death, but on further consideration, supposing them sincere, the chiefs determined to accompany them. On the following morning, however, when they were about to set out for the Osage camp, a chief arose and harangued them, stating that he had had a dream in the night, from the interpretation of which, he was confident that the Wahconda was averse to their proposed visit.

This information deterred all from going, with the exception of two, who mounted their horses, and followed the messenger, saying, that whatever might be the event, the Osages should not be led to believe, that every individual of the nation was afraid to rely upon their faith.

They were, however, soon undeceived. The enemy, who had placed themselves in ambuscade on each side of the path at a suitable position, fired on the Kouzas, one of whom was killed, and the other escaped to his people.

The Osages, who had hoped by this ruse de guerre to slaughter all the chiefs without any loss to themselves, finding their scheme abortive, rushed on to attack the village.

They were met by about one half their number of Konzas, who, after an obstinate encounter, repulsed them with considerable loss.

After the action, some one informed Son-ja-nin-ga that his son was among the slain. "Did he die with his face to the enemy," said the father. "He did so," replied the other. "Then he perished nobly," rejoined Son-ja-nin-ga, exultingly, and "I will not lament his fall." This resolution, however, was so much at variance with his sensibility, that it could not long be maintained. He mounted on the top of his lodge and harangued his people on the subject of the martial deeds of his son, who had already become a distinguished warrior; but when he spoke of his final scene, he was so absolutely overpowered by grief, that he precipitated himself from his elevated situation to the earth; receiving however, but little injury, he immediately assumed the state of mourning with its utmost rigours.

At the age of fourteen or fifteen, it is not uncommon for the young Omawhaw to elope with a married woman, and fly for protection to the Puncaws.

The home of the young man, until he marries, is his father's house; but after he thus changes his condition, he repairs to the house of his father-in-law until the birth of the first child, when he returns with his little family to his father's dwelling, where he continues to reside. On national hunts he provides a separate skin lodge for his family.

When more advanced in age, and of some little consequence or influence amongst the people, he unites with two or three families in the building of a permanent dirt lodge in the village, similar to those already described of the Konzas.

The labour of erecting this edifice, devolves almost exclusively upon the squaws. The interior is readily furnished; the indispensable requisites being only a kettle, a wooden bowl, and a couple of horn spoons, a few skins for a bed and covering, a pillow made of leather stuffed with hair, and a bison's stomach, instead of a bucket, for carrying water.

On the death of the husband, the squaws exhibit the sincerity of their grief, by giving away to their neighbours, every thing they possess, excepting only, a bare sufficiency of clothing to cover their persons with decency. They go out from the village and build for themselves a small shelter of grass or bark; they mortify themselves by cutting off their hair, scarifying their skin, and in their insulated hut they lament incessantly. If the deceased has left a brother, he takes the widow to his lodge after a proper interval, and considers her as his wife, without any preparatory formality.[*] If the deceased has not left a brother, the relations of his squaw take her to their lodges. This lamentation and mortification, which the squaws impose upon themselves, continue for a period of six or eight months, or even a year.

Many circumstances tend to show, that the squaw is susceptible of the most tender and permanent attachment to an individual of the opposite sex, and that on the cessation of all hope of a union with the beloved object, the consequences have sometimes been fatal. Several instances came to our knowledge of a young female committing the act of suicide, after marriage with a person, in obedience to the will of her parents, whilst her affections were devoted to another.

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[*] This custom is the same with that of the ancient Jews under the law of Moses, for which we have the authority of St. Luke. 'Moses wrote unto us, if any man's brother die, having a wife, and he die, without children, that his brother should take his wife, and raise up seed unto his brother.' And Elphinstone, in his account of Caubul, informs us, that among the Afghauns, as among the Jews, it is thought incumbent on the brother of the deceased to marry his widow.

The maternal fondness appears also to be not less exquisite than we perceive it to be with civilized mothers. The following anecdote may be cited in support of this observation.

In the year 1814, a trader married a beautiful squaw of one of the most distinguished families in the Omawhaw nation. This match, on the part of the husband, was induced by the following circumstances. Being an active, intelligent, and enterprising man, he had introduced the American trade to the Missouri Indians, and had gained great influence amongst them by his bravery and ingenuous deportment. But he at length perceived that his influence was gradually declining, in consequence of the presence and wiles of many rival traders, to whom his enterprise had opened the way, and that his customers were gradually forsaking him.

Thus circumstanced, in order to regain the ground he had lost, he determined to seek a matrimonial alliance with one of the most powerful families of the Omawhaws. In pursuance of this resolution, he selected a squaw, whose family and friends were such as he desired. He addressed himself to her parents, agreeably to the Indian custom, and informed them that he loved their daughter, that he was sorry to see her in the state of poverty common to her nation, and although he possessed a wife among the white people, yet he wished to have one also of the Omawhaw nation. If they would transfer their daughter to him in marriage, he would obligate himself to treat her kindly; and as he had commenced a permanent trading establishment in their country, he would dwell during a portion of the year with her, and the remainder with the white people, as the nature of his occupation required. His establishment should be her home, and that of her people during his life, as he never intended to abandon the trade. In return, he expressed his expectation, that for this act, the nation would give him the refusal of their peltries, in order that he might be enabled to comply with his engagement to them. He further promised, that if the match proved fruitful, the children should be made known to the white people, and would probably be qualified to continue the trade after his death.

The parents replied with thanks for his liberal offers, and for his disposition to have pity on them, they would not object to the connection, and hoped that their daughter would accept of him as a husband.

The parents then retired, and opened the subject to the daughter; they assured her that her proposed husband was a great man, greater than any of the Omawhaws; that he would do much for her and for them, and concluded by requesting her to acquiesce in the wishes of the white man. She replied that all they said, was without doubt, true, and that agreeably to his request, she was willing to become his wife.

The agreement being thus concluded, the trader made presents agreeably to the custom of the nation, and conducted his interesting prize to his house.

The succeeding Spring, the trader departed for the settlements, leaving her of course at his trading house.

The ensuing autumn she had the pleasure to see him return, having now conceived for him the most tender attachment. Upon his visit the following season, she presented him with a fine daughter, born during his absence, and whom she had nursed with the fondest attention. With the infant in her arms, she had daily seated herself on the bank of the river, and followed the downward course of the stream, with her eye, to gain the earliest notice of his approach. Thus time passed on. The second year the father greeted a son, and obtained his squaw's reluctant consent to take their daughter with him on his return voyage to the country of the white people. But no sooner had he commenced his voyage, and although she had another charge upon which to lavish her caresses, than her maternal fondness overpowered her, and she ran crying and screaming along the river side in pursuit of the boat, tearing out her long flowing hair, and appearing to be almost bereft of reason. On her return home she gave away every thing she possessed, cut off her hair, went into deep mourning, and remained inconsolable. She would often say that she well knew, that her daughter would be better treated, than she could be at home, but she could not avoid regarding her own situation to be the same as if the Wahconda had taken away her offspring forever.

One day, in company with six other squaws, she was engaged in her agricultural labours, her infant boy being secured to his cradle-like board, which she had carefully reclined against a tree at a short distance. They were discovered by a war party of Sioux, who rushed towards them with the expectation of gratifying their vengeance by securing all their scalps. An exclamation from her companions directed her attention to the common enemy, and in her fright she fled precipitately, but suddenly recollecting her child, she swiftly returned full in the face of the Sioux, snatched her child from the tree, and turned to save its life, more precious than her own. She was closely pursued by one of the enemy, when she arrived at a fence which separated her from the field of the trading house. A moment's hesitation here would have been fatal, and exerting all her strength she threw the child, with its board, as far as she could on the opposite side.

Four of the squaws were tomahawked, and the others escaped, of which number the mother was one, having succeeded in bearing off her child uninjured.

The trader, on his arrival at the settlements, learned that his white or civilized wife had died during his absence, and after a short interval devoted to the usual formalities of mourning, he united his destinies with another, and highly amiable lady. The second season his wife accompanied him on his annual voyage up the Missouri, to his trading house, the abode of his squaw.

Previously to his arrival, however, he dispatched a messenger to his dependents, at the trading house, directing them to prevent his squaw from appearing in the presence of his wife. She was accordingly sent off to the village of her nation, a distance of sixty or seventy miles. But she could not long remain there, and soon returned with her little boy on her back, and accompanied by some of her friends, she encamped near her husband's residence. She sent her son to the trader, who treated him affectionately. On the succeeding day the trader sent for his squaw, and after making her some presents he directed her to accompany her friends who were then on their way to their hunting grounds.

She departed without a murmur, as it is not unusual with the Omawhaws to send off one of their wives, on some occasions, while they remain with the favourite one.

About two months afterwards the trader recalled her. Overjoyed with what she supposed to be her good fortune, she lost no time in presenting herself before the husband whom she tenderly loved. But great was her disappointment, when her husband demanded the surrender of the child, and renounced for the future any association with herself, directing her to return to her people, and to provide for her future well being, in any way she might choose.

Overpowered by her feelings on this demand and repudiation, she ran from the house, and finding a periogue on the river shore, she paddled over to the opposite side and made her escape into the forest, with her child. The night was cold and attended with a fall of snow and hail. Reflecting upon her disconsolate condition, she resolved to return again in the morning, and with the feelings of a wife and a mother to plead her cause before the arbiter of her fate, and endeavour to mitigate the cruel sentence.

Agreeably to this determination she once more approached him, upon whom she believed she had claims paramount to those of any other individual. "Here is our child," said she, "I do not question your fondness for him, but he is still more dear to me. You say that you will keep him for yourself, and drive me far from you. But no, I will remain with him; I can find some hole or corner into which I may creep, in order to be near him and sometimes to see him. If you will not give me food, I will, nevertheless, remain until I starve before your eyes."

The trader then offered her a considerable present, desiring her at the same time to go, and leave the child. But she said, "is my child a dog, that I should sell him for merchandize? You cannot drive me away; you may beat me, it is true, and otherwise abuse me, but I will still remain. When you married me, you promised to use me kindly, as long as I should be faithful to you; that I have been so, no one can deny. Ours was not a marriage contracted for a season, it was to terminate only with our lives. I was then a young girl, and might have been united to an Omawhaw chief, but I am now an old woman, having had two children, and what Omawhaw will regard me? Is not my right paramount to that of your other wife; she had heard of me before you possessed her. It is true her skin is whiter than mine, but her heart cannot be more pure towards you, nor her fidelity more rigid. Do not take the child from my breast, I cannot bear to *hear* it cry, and not be present to relieve it;* permit me to retain it until the Spring, when it will be able to eat, and then, if it must be so, take it from my sight, that I may part with it but once.'

Seeing her thus inflexible, the trader informed her, that she might remain there if she pleased, but that the child should be immediately sent down to the settlements.

The affectionate mother had thus far sustained herself during the interview with the firmness of conscious virtue, and successfully resisted the impulse of her feelings, but nature now yielded, the tears coursed rapidly over her cheeks, and clasping her hands, and bowing her head, she burst into an agony of grief, exclaiming, "why did the Wahconda hate me so much, as to induce me to put my child again into your power!"

The feelings of the unhappy mother were, however, soon relieved. Mr Dougherty communicated the circumstances of the case to Major O'Fallon, who immediately, and peremptorily, ordered the restoration of the child to its mother, and informed the trader that any future attempt to wrest it from her, should be at his peril.

As in civilised communities, so amongst the Indians, quarrels sometimes occur. There being no legal tribunal to appeal to, amongst the Missouri Indians, individuals often terminate their animosity by resorting to arms and relying upon their own valour or address. This extremity is, however, sometimes obviated, by the soothing interference of relatives and friends, or by the violent interposition of a warrior.

Pugilism they despise, regarding it entirely beneath the dignity, even of an ordinary man, saying that it is only fit for the decision of the quarrels of children and squaws, and that when a man is called upon to decide a question by force, he ought to resort to the aid of mortal weapons.

Hard-heart, chief of the Ioways, quarrelled with a trader, near the mouth of the Platte, and challenged him immediately to single combat, with any weapons he might choose, either agreeably to the manner of the whites, or to the usual Indian mode, of either combatant availing himself of opportunity or stratagem. The trader refusing to fight, Hard-heart departed, declaring he would come again in the morning, in order to put him to death as a coward, "and," said he, "the Wahconda himself will not be able to save you." The trader for security, assembled around his hut several Oto warriors as a guard, so that when the chief returned agreeably to his promise, to execute his threat, he could not gain admittance. After waiting a long time in vain, he at length sent word to the trader that he forgave him and would not injure him. The trader on receiving this information, having sufficient confidence in his good faith, dismissed his guards; and some time afterward, we observed them riding together, on their return from the Pawnee villages, to which they had accompanied the Oto nation.

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* A mode of expression common to the Indians, who are in the habit of communicating their ideas by allusions to the senses.

About a twelvemonth before our arrival at Engineer cantonment, *Hashea* (the Cut-nose) and the *Brave*, two highly distinguished warriors of the Oto nation, had a very serious quarrel, which their friends could not perfectly adjust, but only succeeded in preventing a personal combat. Since our departure for the Rocky Mountains, Major O'Fallon informs us, that this hostility, still further aggravated by another incident, has terminated fatally. The nephew of the Brave grossly insulted, by his pertinacious addresses, the wife of Hashea, whilst the latter warrior was absent on a war excursion. On his return, being informed of the indignity offered to his wife, he sought the offender, knocked him down with his war club, and beat him with great severity. The Brave was summoned by his friends, who seeing the bruised condition of his relative, vowed revenge. He provided a large sharp pointed knife, and throwing his bison robe over his arm, by way of shield, he sallied out and passed twice through the village, uttering occasionally, with a loud voice, a challenge to Hashea to come forth, and decide their old quarrel by means of the knife. Hashea feared no man, and would have presented himself before his old enemy at the first call, but was prevented by some friends who were with him in his lodge; these, however, after the lapse of a short time, he contrived to elude, and swiftly sought the Brave. He threw down his blanket, and exclaimed "you and I cannot live in the same nation, the time has arrived when one of us must die." They then closed in fight. The Brave had much the advantage, he was a large man, and his person was effectually protected by his robe, which received the thrusts of his adversary's knife, whilst at every blow the weapon of the Brave was sheathed in the naked body of the interesting Hashea. The latter was soon dispatched, but as he staggered backwards under the grasp of death, he aimed a final blow at his antagonist, and had the gratification to see his blade enter his neck and pass far downward; at which he uttered a shout of exultation and died. The Brave's wound was mortal, but he lived long enough to see the features of Ietan, the friend of Hashea, bent in sternness upon him, and to hear him lament that the conqueror of his friend, should die without the agency of his arm. The deceased warriors belonged to the two most powerful bands of the nation. Hashea was a near kinsman of the Crenier, leader of one band, and the Brave was a brother of Shongotonga, leader of the other, and principal chief of the Otos. The consequence of the quarrel involved the whole nation, and to avoid farther hostilities the bands separated from each other, into distinct villages, in which situation they now remain.

The designations by which the Omawhaws distinguish their various degrees of consanguinity are somewhat different in meaning from ours. Children universally address their father's brother by the title of *father*, and their mother's brother by that of *uncle;* their mother's sister is called *mother*, and their father's sister *aunt*. The same relative designations extend to the step-parents, relatives, and to those of the grand-parents. The children of brothers and sisters address each other by the titles of brother and sister. Step-parents treat their step-children with as much kindness and attention as their own; and a stranger in the family would not perceive any partiality shown to the latter; indeed the natural parent exacts such a course of conduct from the other, and a separation would probably ensue, from an opposite course being obstinately persevered in, as a parent, will, on no account, suffer his or her offspring to be abused.

Natural children are generally retained by the mother; but if she is willing to part with them, or at her death, they are received into the family of the father, where they experience the same kindness and attention as his other children; but an Indian will consider himself insulted, if he is told that he had no proper father or mother.

Some mothers of natural children will not permit them to visit the father, while she can control them; they generally remain with the mother, and support her.

A man applies the title of We-hun-guh, or sister-in-law, to his wife's sister, until he takes her as his wife; he also calls his wife's brother's daughter Wehunguh, and may in like manner take her to wife; thus the aunt and the niece marry the same man.

A man distinguishes his wife's brother by the title of Ta-hong or brother-in-law, and his son also by the same designation. He calls the wife of his brother-in-law Cong-ha, or mother-in-law.

A woman calls her husband's brother Wish-e-e, or brother-in-law, and speaks of his children as her own. Her husband's sister she distinguishes by the title of relationship, Wish-e-cong, or sister-in law. Men who marry sisters address each other by the title of brother. All women who marry the same individual, even though not previously related, apply to each other the title of sister.

Remote degrees of consanguineous alliance, are distinguished by their various appellatives, and are universally acknowledged.

It is a great singularity in the manners of the Omawhaws, that neither the father-in-law nor mother-in-law will hold any direct conversation with their son-in law; nor will he on any occasion or under any consideration converse immediately with them, although no ill will exists between them; they will not, on any account, mention each other's name in company, nor look in each other's faces; any conversation that passes between them is conducted through the medium of some other person.

The Big Elk, Ongpatonga, otherwise named Ar-re-catta-wa-ho, which means Big Elk in the Pawnee language, married the daughter of Me-chah-pa, or the Horse-head. One day, on a visit to his wife, he entered the lodge of her father, unobserved by him, who was busily engaged in play with his dog, rubbing him with his hand, and frequently repeating his name which unfortunately happened to be the same with that of the Big Elk in Pawnee. Mechahpa's wife hearing her husband repeat this name in the presence of the son-in-law; after making many winks and signs without effect, arose from her seat and struck him violently with her fist upon the back, exclaiming, "you old fool! have you no eyes to see who is present? you had better jump up on his neck, (meaning that of the Big Elk) and ride him about like a dog." 'Wah!' ejaculated Mechahpa, in surprise, at the sudden and emphatical salutation, and understanding the meaning of the address, he ran out of the lodge in confusion.

This extraordinary formality is carried to a great length, and is very rigidly observed. If a person enters a dwelling in which his son-in-law is seated, the latter turns his back, covers his head with his robe, and avails himself of the first opportunity to leave the presence. If a person visit his wife, during her residence at the lodge of her father, the latter averts himself and conceals his head with his robe, and his hospitality is extended circuitously by means of his daughter, by whom the pipe is transfered to her husband to smoke. Communications or queries intended for the son-in-law are addressed aloud to the daughter, who receives the replies of her husband. The same formality is observed by the mother-in-law; if she wishes to present him with food, it is invariably handed to the daughter for him, or if she happens to be absent for the moment, it is placed on the ground, and she retires from the lodge, that he may take it up and eat it. A ten years' separation will not change this custom. The Pawnees have no such formality, and on that account, are said to be great fools.

A Frenchman married and resident with the Omawhaws, one day, inadvertently mentioned the name of his father-in-law, in presence of several people, who immediately declared him to be as great a fool as a Pawnee, thus to have so little respect for his father-in-law, as to treat him with as little ceremony as he would a dog.

The more distinguished and respectable the parties are, the more rigidly is this rule observed; and if either of the parties should be treated otherwise, the departure from the observance would be regarded as a mark of disrespect for a trifling fellow.

Fraternal affection is very strong and permanent. The chief and almost exclusive sources of infraction of this natural bias, are adultery with each others' wives, and conflicting intrigues for the attainment of the honour of a chieftain.

Two Omawhaw brothers had stolen a squaw from an individual of their nation, and were on their journey to seek a refuge in the Puncaw village. But they had the misfortune, in a large prairie, to meet with a war party of Sioux, their implacable enemies. They immediately concealed themselves in a deep ravine, which, at bottom, was covered with dry reed grass. The Sioux surrounded this spot, and set fire to the windward side of the reeds, in order to drive them out. When the conflagration had nearly reached the fugitives, one of the brothers remarked, that the Wahconda had certainly not created him to be smoked out like a raccoon; (the Indians smoke this animal out of hollow trees by kindling a fire at the root); he urged his brother to attempt his escape in one direction, whilst he would attract the attention of the enemy, by sallying out upon them alone, and endeavoured to destroy as many of them as possible, in anticipated revenge for that death which he considered as inevitable; "one or both of us," said he, "must certainly be sacrificed, save yourself if you can; I will be the victim, and may fortunately receive a death blow in the conflict, and thus escape the disgrace of captivity." He then rushed forth amongst the Sioux, shot one, and with his knife wounded several before he was dispatched. His brother availing himself of the abstracted attention of the enemy, effected his escape, but the squaw was burned to death. In this magnanimous self-devotion, the gallant brother exhibits an instance of chivalric heroism which would have immortalized a Roman warrior.

The young men are generally coupled out as friends; this tie is very strongly knit in youth, but is usually enfeebled by matrimony or the concerns of more advanced age; yet it is sometimes as lasting as the life of the individuals.

The Omawhaws, as we before observed, preserve no account of their ages, they think that some evil will attend the numbering of their years. Me-chah-pa the Horse-head, who is an intelligent medicine man, asked one of our party, whom he was informed was an eminent medicine man of the white people, amongst many other questions, how old he was; he was answered, about forty-five, at which he expressed his regret that he had lived so long in the world, and to so little purpose.

Old age amongst the Omawhaws is generally loquacious, but it does not seem to be distinguished as in civilized life, by an accumulation of maladies. Aged Indians, whether male or female, generally continue in apparent good health to the last, and the visitation of death is most frequently sudden and unexpected; an instance of this has already been related which occurred to old Loutre an individual of the Missouri nation.

They become bowed and very much wrinkled with age, and their joints become less flexible. But their hair does not so generally change to gray as that of men in a state of civilization. The hair of the sides of the head, which is so frequently shorn or extracted, often assumes the gray appearance, at a comparatively early age, and is almost universally of that tint in aged persons, whilst that of the top and back of the head, which is always permitted to attain a moderate length, is simply interspersed with a few gray hairs. Many aged squaws preserve the hair of the usual youthful colour; in others we observe an intermixture of gray, and it may be remarked that the aged of this sex are more frequently gray-haired than the men.

We saw a middle aged woman whose hair had pretty generally changed to gray; but this appearance, at her age was so unusual, that the Indians attributed it to her having infracted the injunctions of her medicine, by eating forbidden food.*

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* Humboldt observes of the natives of New Spain, that "their head never becomes gray. It is infinitely more rare to find an Indian than a negro with gray hairs, and the want of a beard gives the former a continual air of youth. The skin of Indians is also less subject to wrinkles." In this latter character, at least, it will be perceived, that our observations on the Missouri Indians, do not coincide with those of the Baron, respecting the natives he describes. Ulloa informs us that the symptoms of old age are a beard and gray hairs. But the natives of the region of the Missouri have certainly no greater density of beard, when advanced in age, than during their

In proportion as persons of either sex approach to the state of superannuation, the respect of their family and acquaintances is withdrawn from them, and they are finally regarded as useless burdens upon the community. They are subjected to the pranks and ridicule of the young people, which, however, they seem rather to invite by drollery, jokes, and stories, than to discourage by a repulsive demeanour.

The aged men contrive to render themselves useful, by assisting the squaws in their culinary operations, and by haranguing; a service for which their loquacity eminently qualifies them.

The aged squaws can generally assist in light employments, such as making and mending mockasins, leggings, stringing beads, &c.; but during the rigours of winter they are generally seated near the door of the travelling lodge, partially defended from the cold by an old ragged robe, and occupied with the menial service of pushing up the half-burned pieces of wood to the fire, and driving out the dogs; in this situation, they are more exposed to the weather than any other inmate of the tenement.

Though thus neglected, the aged are not permitted to suffer from hunger, when in the village, if food can be obtained. But when they become helpless on a march, and the transporting of them is attended with much difficulty, it is considered unavoidable to abandon them to their fate; with this view a small grass shelter is erected for them, in which some food is deposited, together with wood and water. When thus abandoned by all that is dear to them, their fortitude does not forsake them, and the inflexible passive courage of the Indian, sustains them against despondency. They regard themselves as entirely useless, and as the custom of the nation has long led them to anticipate this mode of death,

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earlier years, though it is equally certain, that owing to a neglect of personal neatness, their beard is suffered to grow; yet agreeably to our opportunities of judging, its ordinary character of sparse distribution, is never changed.

they attempt not to remonstrate against the measure, which is, in fact, frequently the consequence of their earnest solicitation.

In this situation, the devoted man sings his war songs to the Wahconda, narrating the martial exploits of his youth, and finally chaunts his death song.

If, on the return of the nation from the hunt, he is still living, his family or friends take him with them to the village, and guard him from want, until the succeeding general expedition.

CHAPTER XII.

Diseases—Medical and Surgical knowledge—Drunkenness, and other vices—Ideas of God, and of a future state—Superstition, and practice of the Magi—Expiatory tortures.

The Omawhaws endure sickness and pain with great fortitude; most of them, when thus afflicted, rarely uttering a murmur. Their catalogue of diseases, and morbid affections, is infinitely less extensive than that of civilized men.

Rheumatism is rare, and gout appears to be unknown. No case of phthisis or of jaundice fell under our observation. King's-evil is not uncommon, and although they have no reliance on the sanative touch of a king or chief, yet, as their practice seems confined to an inefficacious ablution with common water, many fall victims to the disease. Many are also afflicted with ulcers, which sometimes terminate fatally. Decayed teeth are rare. Plica polonica is unknown. Baldness seems to be also unknown, the hair being always retained, however advanced the age of the individual.

Nymphomania occurred in the person of a widow, who was thus afflicted about two months; her symptoms were attended with an effusion of blood from the nose. On her recovery, she attributed the disorder to the operation of some potent mystic medicine.

Hypochondriasis seems to be unknown. Canine madness also appears to be without an example, their dogs not having yet been visited by the disease. They are rarely afflicted with dysentery, though children are sometimes subject to it in consequence of eating unripe fruits, such as plums, grapes and maize. They are never known to be subject to the *coup de soleil*, although they travel for days and even weeks over the unsheltered prairies, without any covering whatever for the head, which is consequently exposed to the full radiance of the sun, both in a state of activity and quiescence. White men residing with them, and who have partaken in their hunts, and consequent insolation, have been visited with this distressing affection, although their heads were protected, invariably, by hats or handkerchiefs.

The cuticle of these Indians is not known to have been acted upon by contact with poisonous plants, though white men, travelling with them, have experienced the effects of the usual deleterious properties of the poison vine (rhus radicans), which is, to a certainty, abundant in proper situations in the Missouri country. What effects would result from the application of this plant, to the only part of the body of the Indian, which is never exposed to the direct influence of external causes, is a subject deserving of experimental inquiry.

The hare-lip sometimes occurs, but it may be properly considered as still more rare, than amongst white people.

Frosted limbs are treated by immersion in cold water, so as gradually to restore the lost temperature of the part. The magi also perform over them their mystic rites, amongst which the only topical application, is made by chewing some roots and blowing the fragments, and accompanying saliva, violently upon the part, with many antic capers.

Goitre and wens are not known. Fevers, and fever and ague are exceedingly rare. Ophthalmic diseases, and casualties affecting the eye, are frequent. The eyes of children are sometimes injured or destroyed, by missiles, in incautious play or juvenile rencontres. But blindness is more frequently the effect of the gradual operation of disease. The eyes become sore and the lids inflamed; white opake maculæ, after some time appear in the eye, which enlarge, untill they cover it entirely, and prevent the ingress of light. It is probable that they possessed no rational remedy for this evil, previously to their acquaintance with the traders, excepting the extracting of blood from the temple, by their process of cupping; the traders, however, have taught them to remove the opacity, by blowing burnt alum into the eye through a quill, a remedy so familiar in the veterinary art. To this disease children as well as adults are obnoxious.

Another ophthalmia, which also results in the destruction of the faculty of vision, commences with a superabundant secretion of the fluid of the lachrymal duct, succeeded by inflammation of the lids; the sight becomes gradually debilitated, until at length the pupil assumes an opake white appearance; probably fistula lachrymalis.

Temporary blindness, which sometimes eventuates in permanent loss of sight, occurs during the winter, to incautious travellers who pass over the prairies covered with snow, from which the solar light is so brilliantly reflected. A party, that accompanied Mr. Dougherty on a journey, being thus exposed, became unable to distinguish objects, and had not his sight been preserved, they might never have regained their stockade.

The blind are not neglected by their family and friends; on the contrary, we had several opportunities of observing them to be well clothed and fed, and much at their ease. When superannuated, however, they are not exempted from the fate attendant on that state.

An affection, or pain in the breast, distinguished by the name of Mong-ga-ne-a, seems to be the consequence of excessive indulgence in tobacco, and the habitual inhaling of the smoke of it, into the lungs. In their attempts to alleviate this complaint, the magi affect to extract from the part, by suction, balls and pellets of hair, and other extraneous substances, which they had previously concealed in their mouths, for the purpose of deceiving the patient.

An individual applied to one of our party to cure him of this pain, but being advised to desist from the indulgence of tobacco smoking, he appeared rather willing to bear with his disease.

They sometimes say that their liver pains them, a disorder which they call Ta-pe-ne-a.

They are not exempt from catarrhs, the consequence of great exposure to sudden vicissitudes of temperature; a disease similar to the influenza is sometimes prevalent, and known by the name of Hoh-pa.

A deaf and dumb boy occurred in the Oto nation; an adult with a curved spine; and another with an inflexible knee, the leg forming a right angle with the thigh. But we have not observed any one of them with either eye deviating from the true line of vision.

The medical and surgical knowledge of the Omawhaws is very inconsiderable, and what there is, is so much blended with ceremonies, which to us appear superstitious, inert, and absurd, that it would seem, that, with the exception of a few instances, they have no reasonable mode of practice.

Sweating baths are in much estimation, and are used for the cure of many ailments. These are temporary constructions, generally placed near the edge of a water course; they are formed of osiers, or small pliant branches of trees, stuck into the soil in a circular arrangement, bent over at top so as to form a hemispherical figure, and covered in every part with bison robes. They are of different sizes, some are calculated to contain but a single individual, whilst others afford space for five or six at once. The invalid enters with a kettle of water and some heated stones, on which the water is sprinkled, until the steam produced is sufficient for his purpose. When they conceive that his perspiration has been as profuse as necessary, he is taken out, and plunged into the water, and even if the stream be covered with ice, this is broken to admit the patient. He is not subjected a second time to the action of the steam, but covers himself with his robe and returns home.

We did not learn, that they possessed any knowledge of cathartic or emetic medicines. But as a substitute for the latter, a feather is thrust down the throat, until its irritating effect produces vomiting.

For the cure of cholic, warm topical applications are made, and the abdomen is kneaded with the fist.

They have no substitute whatever for opium, and we do not know that they have any for mercury.

For the alleviation of an internal local pain, a severe remedy is sometimes resorted to. A portion of the medullary substance of a plant, is attached to the skin over the part affected, by means of a little spittle; it is then touched with fire, and burns slowly down to the skin, upon which a vesication is soon produced, and accomplishes the object intended, of removing, at least for a time, the internal pain to the surface. This seems to be the only species of actual cautery made use of.

The Indians, who reside in the upper regions of the Missouri, practise bleeding for various ailments. This operation is sometimes performed with a knife or arrow point. At other times, and not unusually, a sharp stone is placed upon the part from which blood is to be drawn, and it is then struck with a stick, much in the same manner that veterinarians operate with the phlegm. They thus bleed in the arm, thigh, leg, &c.

They never dissect the human body, expressly for the purpose of acquiring a knowledge of its structure; but they have a general idea of the position of the vitals and viscera, acquired upon the field of battle, by their custom of hacking the carcases of the slain; a knowledge which teaches them on what part of the body of an enemy to strike, in order that the wound may be mortal.

Gun-shot wounds are administered to by the magi, who powwow over them, rattle their gourds and sing, whilst they chew roots, and blow out the fragments and saliva on the part. But the efficient practice in cases of wounds of this nature, is their system of depuration by means of suction; they apply their lips to the wound and draw out the pus as it is secreted; by this mode of treatment they seem to be very successful in the cure of gun-shot wounds.

Amputation of limbs is not practised in their surgery.

The wound produced by the arrow, is treated much in the same manner with that of the gun-shot, after the weapon is thrust through the part, in the direction in which it entered; or, if this cannot be accomplished, the arrow is withdrawn, and the head or point being very slightly attached to the shaft, remains in the body, unless the wound is superficial, in which case it is cut out with a knife.

A broken limb is extended to its place, and enveloped with a leathern strap; the union generally takes place promptly, but the member usually remains more or less bent or crooked.

They have no rational mode of treating the scalp wound. A squaw who had been scalped, covered the part, after its edges had healed, with a peruke made of bison hair, until the hair on the other parts of her head became of sufficient length to conceal the deformity.

Dislocated members are reduced by extension, but with so little art, that they are frequently unsuccessful, and the limb remains permanently disjointed.

The Omawhaws are entirely destitute of all condiments, with the exception of salt, which, however, in their eating they rarely use.

Confirmed insanity appears to be unknown.

Every person, in any degree conversant with Indian manners and customs, is struck with their proneness to that most abominable and degrading of all vices, intoxication from the use of spirituous liquors. The Missouri Indians, collectively, form no exception to this general trait. A member of the

Pawnee war party, which we so unfortunately encountered near the Konza village, was more solicitous to obtain a drink of that pernicious beverage, than to possess any other article within the camp. We, however, persisted in refusing it to him, although he fell upon his knees and laid his hands convulsively upon his breast and [illegible] crying out, with a voice and manner of earnest supplication, "whiskey, whiskey." The vice of drunkenness is yet, however, extremely rare in the Pawnee, as well as the Konza nation. But the Omawhaws are much addicted to it, and, with the exception of the chiefs, the indulgence does not, in any very considerable measure, degrade them in the estimation of their countrymen, who regard it as a 'delightful frolick;' unless indeed the indulgence is permitted to grow into a habit.

To this cause, more especially than to any other, is perhaps attributable the depreciation of the influence of Ongpatonga, notwithstanding the efforts of his comparatively superior intellectual abilities.

The greatest offences and insults are overlooked if committed in this state, and even murder is palliated by it. The actions of drunken Indians, are as ridiculous and puerile as those of civilized drunkards; chiefs, warriors, and common men, roll indiscriminately on the earth together, or dance, caper, laugh, cry, shout, fight, or hug and kiss, and rub each other with their hands, in the most affectionate or stupid manner. If in the vicinity of white people, they appoint some of their number to remain sober, in order to prevent injury or insult being offered to them.

The squaws sometimes tie them with cords, in order to preserve the peace, and are thanked for their precaution, when the subjects return to the dignity of reason.

Squaws, however, will themselves get drunk on certain occasions, and children are frequently intoxicated with liquor given them by the parents.

Whiskey, which is the only spirituous liquor they are acquainted with, is furnished to them freely by the traders; and the existing law of the United States, prohibiting the sale of it to the natives, is readily evaded, by presenting it to them with a view of securing their custom, not in direct, although implied exchange for their peltries. Nor is this greatest of evils, in the power of the agent to remedy; and until traders are effectually interdicted, by law, from taking any whiskey into the country, even for their own consumption, it must, in defiance of his authority, continue to exist.

Whiskey is distinguished by the appellation of Pa-je-ne or *fire-water*, the letter *j* having the French sound in pronunciation. The state of intoxication is called Ta-ne, a word which has a singular affinity with that by which they distinguish meat broth, or meat water, so great indeed is the similarity of sound between them, that to our ear they appear identical.

Intoxicating drinks do not appear to be ever made use of by the Omawhaws, for superstitious purposes.

Incontinency in married women is often encouraged by their husbands, with the view of receiving presents or of obtaining other trifling advantages. With such motives, stipulations are made for the accommodation of strangers, at the expense of the chastity of the wife. In relation to this particular, the statements of Lewis and Clark,* Bradbury,† Breckenridge,‡ and other travellers, have been confirmed by our own observations.

Vindictive jealousy is no uncommon trait in the Indian character.

When a wife has been found guilty of an intrigue to which her husband has not been accessary, she seldom escapes exemplary punishment at his hands, such as the cutting off her nose or ears, or other mutilations of the countenance.

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* Vol. i. p. 421. † Bradbury's Travels, p. 168.

‡ Breckenridge's Journal of a tour up the Missouri, p. 272.

Among their vices may be enumerated sodomy, onanism, and various other unclean and disgusting practices. What is related of the Illinois by Hennepin,* may, with equal truth, be applied to the Omawhaws. But to the honour of humanity, it may be remarked that those abominable traits of character are not generally conspicuous among them.

This people believe firmly in an existence after death, but they do not appear to have any definite notions, as to the state in which they shall then be. And although they say that many reappear after death, to their relatives, yet such visitants communicate no information respecting futurity. They consist of those only who have been killed, either in battle with the enemy, or in quarrels with individuals of th[illegible]n nation, and their errand is to solicit vengeance on the [illegible]petrators of the deed.

Futurity has no terrors to the dying Omawhaw, as he has no idea of actual punishment, beyond his present state of existence. He, however, regrets the parting from his family and friends, and sometimes expresses his fears that the former will be impoverished, when his exertions for their support, shall be withdrawn.

The Wahconda is believed to be the greatest and best of beings, the creator and preserver of all things, and the fountain of mystic medicine. Omniscience, omnipresence, and vast power are attributed to him, and he is supposed to afflict them with sickness, poverty, or misfortune, for their evil deeds. In conversation he is frequently appealed to as an evidence of the truth of their asseverations, in the words Wahconda-wa-nah-kong, the Wahconda hears what I say, and they sometimes add Mun-ekuh-wa-nah-kong, the earth hears what I say.

Whatever may be the notions of other Indian nations, we did not learn that the Omawhaws, have any distinct ideas of the existence of the devil; or at least, we always experienced

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[*] See Hennepin's Travels, p. 133, Lond. 1698.

much difficulty and delay, when obtaining vocabularies of this and some other languages, in ascertaining corresponding words for *Devil* and *Hell*; the Indians would consult together, and, in one instance, the interpreter told us they were coining a word.

They say that after death, those who have conducted themselves properly in this life, are received into the Wanochea te, or town of brave and generous spirits; but those who have not been useful to the nation, or their own families, by killing their enemies, stealing horses, or by generosity, will have a residence prepared for them in the town of poor and useless spirits; where, as well as in the good town, their usual avocations are continued.

Their Wahconda seems to be a Proteus God; he is supposed to appear to different persons, under different forms. All those who are favoured with his presence become medicine men or magicians, in consequence of thus having seen and conversed with the Wahconda, and of having received from him some particular medicine of wondrous efficacy.

He appeared to one in the shape of a grizzly bear, to another in that of a bison, to a third in that of a beaver, or owl, &c., and an individual attributed to an animal, from which he received his medicine, the form and features of the elephant.

All the magi, in the administration of their medicine to the sick or afflicted, mimic the action and voice, variously exaggerated, and modified, of the animal, which, they say, is their respective medicine, or in other words, that in which the Wahconda appeared to them.

When a magician is called to attend a sick person, he makes preparations for the visit, by washing, and painting with red clay; some of them dress fantastically, but others retain their ordinary apparel, which does not distinguish them from their neighbours; they take with them a dried gourd, or skin, in which are some pebbles or plumstones, to make a rattling noise; the medicine bag is also an indispensable requisite, not for the active properties of its contents, but for the mystic virtues ascribed to them.

When in presence of his patient, he assumes the proper gravity of deportment, and commences his operations by smoking his pipe, and talking to his Wahconda; after this preparatory ceremony, the medicine bag is opened, and the contents displayed, consisting of white and red earth, herbs entire or pulverized, &c. Portions of these are mixed with warm water, in small wooden cups, with which he is provided. Then, with a due degree of solemnity, he advances to his patient, and inquires into the nature of his ailment; he feels the part affected, with his hand, and in case of local pain, he scarifies the part with a flint, and proceeds to suck out the blood, having previously taken a small quantity of water in his mouth. He applies his lips to the wound, and sucks with great force, drawing a considerable quantity of blood, which he occasionally ejects into a bowl, in which some dirt or ashes had been previously sprinkled.

He makes much noise in the operation, by inhaling, and expelling the air forcibly through his nostrils, and at the same time jerks his head from side to side, tugging at the part to facilitate the process. The depletion produced by this method, is sometimes so considerable that the patient becomes relaxed and pallid. Ulcers are often cured in the same manner, and those rude practitioners do not hesitate to apply their mouths to venereal ulcers, extracting from them the pus and blood with impunity.

It has been remarked, that those practitioners have very tumid lips, and this remark is verified in those of Mon-cha-wahconda, or medicine grizzly bear, whom we have frequently seen.

If the patient has no local pain, the magician administers some of his simples, sometimes internally, but generally by friction between his warmed hands, and the breast or abdomen of the patient. At intervals during this operation, and after the termination of it, he rattles his gourd with violence, singing to it with great vehemence, and throwing himself into grotesque attitudes. All this is sometimes daily repeated, until the convalescence or death of the patient.

A wealthy man, when sick, will sometimes send to a great distance for a celebrated practitioner, who, if not already engaged, removes with his family and lodge to the vicinity of the afflicted.

The compensation for all this attendance, and powwowing, is proportioned to the violence and duration of the complaint, and to the wealth of the individual; it is frequently exorbitant, and consists of horses, kettles, blankets, &c., which, although they are never demanded, yet the magician does not fail to allude to some of them as objects of his wishes, and the gratitude of the patient seldom fails on this occasion. If the patient dies, notwithstanding all this necromancy, he is said to be summoned by the Wahconda, and the fee or present to the magician, is made by the relatives or friends of the deceased.

These men sometimes pretend to the spirit of prophecy. One of them ventured to predict, that two squaws, who had recently married white men, would die in the course of a very short time, which he specified. The squaws being much alarmed at the prospect of approaching death, took with them some tobacco and other presents, and went in search of the prophet, in order to prevail upon him to intercede for them, with the Wahconda, and avert their doom. The husband of one of the squaws, a citizen of the United States, hearing of the occurrence, went to the lodge of the magician. He was surprised to see there the squaws perfectly naked before the magician, who had provided himself with a large kettle of warm water, and was himself engaged in squirting the water from his mouth, over their persons.

The husband, incensed at what appeared to him to be nonsense and imposition, kicked over the kettle of holy water, and drove the squaws home to their lodges; but the magician having received the presents, which were the objects of his swindling cunning, pretended that his incantations had had the desired effect with the Wahconda, inducing him to spare their lives.

Many are the impostures which these priests practise on the credulity of the people. And although they are frequently defeated in their attempts to deceive, and justly punished for their hypocritical villainy, yet the advantage of experience seems to profit them little, and deception, practised under a new garb, often attains its ends. How can we wonder at this facility, with which a simple people are blinded, through the medium of their superstitious faith, when we know that infinitely more monstrous absurdities obtain the inconsiderate assent, or excite the fears of thousands of civilized men, in the most populous and enlightened cities of Europe, and America, and that the horse-shoe, even at this day, is frequently seen, attached to the threshold of a door, as a security against the entrance of a witch?

One of these magi acquired a high repute in several of the Missouri nations, by impressing them with the belief, that his body was indestructible to human power, and that if cut into a thousand fragments, and scattered to the winds, these portions would all promptly assemble together again, and become revivified, so that he would receive no injury from the operation. Trusting to his fame, on some slight provocation, he killed a squaw in the midst of her own people, and with the most unbounded confidence, surrendered himself to her exasperated relatives, declaring with exultation that they possessed not the power to harm him.

Unexpectedly, however, they put his vaunted supernatural constitution to the test, by dividing his body into pieces, and scattering them about the vicinity of the village.

They are so entirely habituated to practising the arts of deception, that it would seem, they sometimes persuade themselves that what was at first only feigned, is in truth reality, and that their magic absolutely possesses its attributed healing virtue. One of these men being on a visit to the Pawnee villages, was present at a kind of grand incantation, during which many extraordinary feats were exhibited. He there saw for the first time the remarkable trick, of appearing to cut off the tongue, and afterwards replacing the severed portions without a wound. "There," said Kamercilio, "your medicine is not strong enough to enable you to perform this operation." The stranger, jealous of his national honour, and unwilling to be exceeded, unhesitatingly drew forth his knife, and actually cut off nearly the whole of his tongue, and bled to death before their eyes.

In the country of the Crow Indians, (Up-sar-o-ka,) Mr. Dougherty saw a singular arrangement of the magi. The upper portion of a cotton-wood tree was implanted with its base in the earth, and around it was a sweat house, the upper part of the top of the tree arising through the roof. A gray bison skin, extended with osiers on the inside so as to exhibit a natural appearance, was suspended above the house; and on the branches were attached several pairs of children's mockasins and leggings, and from one of the limbs of the tree, a very large fan, made of war eagle's feathers was dependent.

The Missouri Indians believe earthquakes to be the effect of supernatural agency, connected, like the thunder, with the immediate operations of the Master of Life. The earthquakes which, in the year 1811, almost destroyed the town of New-Madrid of the Mississippi, were very sensibly felt on the upper portion of the Missouri country, and occasioned much superstitious dread amongst the Indians. During that period, a citizen of the United States, resided in the village of the Otoes, trading for the produce of their hunts. One day he was surprised by a visit of a number of Otoes in anger. They said that a Frenchman, who was also trading in the village, had informed them, that the Big-knives had killed a son of the Master of Life; that they had seen him riding on a white horse in a forest country, and being of a sanguinary disposition, they had waylaid and shot him. And it was certainly owing to this act that the earth was now trembling before the anger of the great Wahconda. They believed the story implicitly, and it was with no little difficulty, that the trader divested his own nation of the singular crimination.[*]

As connected with the superstitions of the Missouri Indians, we may mention some anecdotes that came to our knowledge. First, of the Me-ma-ho-pa or medicine stone of the *Gros ventres* or Minnetarees. This is a large, naked, and insulated rock, situate in the midst of a small prairie, at the distance of about two days' journey, southwest of the village of that nation. In shape it resembles the steep roof of a house. The Minnetarees resort to it, for the purpose of propitiating their Man-ho-pa or Great Spirit, by presents, by fasting, and lamentation, during the space of from three to five days.

An individual, who intends to perform this ceremony, takes some presents with him, such as a gun, horse, or strouding, and also provides a smooth skin, upon which hieroglyphics may be drawn, and repairs to the rock accompanied by his friends and magi. On his arrival, he deposits the presents there, and after smoking to the rock, he washes a portion of the face of it clean, and retires with his fellow devotees to a specified distance. During the principal part of his stay, he cries aloud to his God, to have pity on him, to grant him success in war and in hunting, to favour his endeavours to take prisoners, horses and scalps from the enemy. When the appointed time for lamentation and prayer has elapsed, he returns to the rock; his presents are no longer there, and he believes them to have been accepted, and carried off, by the Mahopa himself. Upon the part of the rock, which he had washed, he finds certain hieroglyphics traced with white clay, of which he can generally interpret the meaning, particularly when assisted by some of the magi, who were no doubt privy to the whole transaction. These representations are supposed to relate to his future fortune, or to that of his family or nation; he copies them off, with pious care and scrupulous exactness, upon the skin which he brought for the purpose, and returns to his home, to read from them to the people, the destiny of himself or of them. If a bear be represented, with its head directed towards the village, the approach of a war party, or the visitation of some evil, is apprehended. If, on the contrary, the tail of the bear be towards the village, nothing but good is anticipated, and they rejoice. They say that an Indian, on his return from the rock, exhibited to his friends, on his hieroglyphical chart, the representation of a strange building, as erected near the village; they were all much surprised and did not perfectly comprehend its meaning; but four months afterward, the prediction was, as it happened, verified, and a stockade trading house was erected there, by the French trader Jessaume.

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[*] Many individuals attach small bags, of the size of the end of the thumb, to various parts of their dress, as talismanic preventives of personal injury. The custom of sacrificing their clothes to the medicine is unknown to the Omawhaws, but it is practised with the Upsaroka and some other nations.

Lewis and Clark inform us that the Mandans have a similar oracle.

At the distance of the journey of one day and a half from Knife creek, which divides the larger and smaller towns of the Minnetarees from each other, are situate two conical hills, separated by about the distance of a mile. One of these hills, was supposed to impart a prolific virtue, to such squaws as resorted to it for the purpose of crying and lamenting, for the circumstance of their having no male issue.

A person one day walking near the other mount, fancied he observed upon the top of it, two very small children.

Thinking they had strayed from the village, he ran towards them to induce them to return home; but they immediately fled from him, nor could his utmost speed overtake them, and in a short time they eluded his sight. Returning to the village, the relation of his story excited much interest, and an Indian set out next day, mounted on a fleet horse, to take the little strangers. On the approach of this individual to the mount, he also saw the children, who ran away as before, and although he endeavoured to overtake them by lashing the horse into his utmost swiftness, the children left him far behind. But these children are no longer to be seen, and the hill once of singular efficacy in rendering the human species prolific, has lost this remarkable property. A change, which the magi attribute to the moral degeneracy of the present generation of the *Gros ventres*. Thus, like many of the asserted supernatural occurrences in the civilized world, these are referred back, in their obscure traditions, "out of harm's way."

Lewis and Clark, however, inform us, (p. 53,) that the Sioux have a belief somewhat similar, respecting a hill near Whitestone river, which they fable to be at present occupied by a small and dangerous race of people, about eighteen inches high, and with remarkably large heads; who, having killed three Omawhaws a few years since, have inspired all the neighbouring Indians with a superstitious dread. Although these intrepid travellers visited the haunted hill, they were happy enough, to escape the vengeance of its Lilliputian inhabitants.

With this absurd, but somewhat poetical fable, may be classed the asserted discovery of Lilliputian skeletons of men, on the banks of the Merameg river, and the osteological acumen of the discoverers of those relics, may derive all the support which their theory is susceptible of receiving, from the story of these visionary beings.

Annually, in the month of July, the Minnetarees celebrate their great medicine dance, or dance of penitence, which may well be compared with the Currack-pooja of the expiatory tortures of the Hindoos, so often celebrated at Calcutta. On this occasion a considerable quantity of food is prepared, which is well cooked, and served up in their best manner. The devotees then dance and sing to their music at intervals, for three or four days together in full view of the victuals, without attempting to taste of them. But they do not, even at this time, forego their accustomed hospitality. And if a stranger enters, he is invited to eat, though no one partakes with him. On the third or fourth day, the severer expiatory tortures commence, to which the preceding ceremonies were but preludes. An individual presents himself before one of the officiating magi, crying and lamenting, and requests him to cut a fillet of skin from his arm, which he extends for that purpose. The devout operator thrusts a sharp instrument through the skin near the wrist, then introduces the knife, and cuts out a piece of the required length, sometimes extending the excision entirely to the shoulder. Another will request bands of skin to be cut from his arm. A third will have his breast flayed, so as to represent a full moon or crescent. A fourth submits to the removal of concentric arcs of skin, from his breast. A fifth prays the operator, to remove small pieces of skin, from various indicated parts of his body; for this purpose an iron bodkin is thrust through the skin, and the piece is cut off, by passing the knife under the instrument.

Various are the forms of suffering which they inflict upon themselves. An individual requests the operator, to pierce a hole through the skin of each of his shoulders, and after passing a long cord through each of these holes, he repairs to a golgotha at some distance from the village, and selects one of the bison skulls collected there. To the chosen cranium he affixes the ends of his cords, and drags it in this painful manner to the lodge, around which, he must go with his burden, before he can be released from it. No one is permitted to assist him, neither dares he to put his own hands to the cords, to alleviate his sufferings. If it should so happen that the horns of the cranium get hooked under a root or other obstacle, he must extricate it in the best manner he can, by pulling different ways, but he must not touch the rope or the head, with his hands, or in any respect attempt to relieve the painful strain upon his wounds, until his complete task is performed.

Some of the penitents have arrows, thrust through various muscular parts of their bodies, as through the skin and superficial muscles of the arm, leg, breast and back.

A devotee caused two stout arrows to be passed through the muscles of his breast, one on each side near the mammæ. To these arrows, cords were attached, the opposite ends of which, were affixed to the upper part of a post, which had been firmly implanted in the earth for the purpose. He then threw himself backward, into an oblique position, his back within about two feet of the soil, so as to depend with the greater portion of his weight by the cords. In this situation of excruciating agony, he continued to chaunt and to keep time to the music of the gong, until from long abstinence and suffering he fainted. The bystanders then cried out "Courage, courage," with much shouting and noise; after a short interval of insensibility he revived, and proceeded with his self-inflicted tortures as before, until nature being completely exhausted, he again relapsed into insensibility, upon which he was loosed from the cords, and carried off amidst the acclamations of the whole assembly.

Another Minnetaree, in compliance with a vow he had made, caused a hole to be perforated through the muscles of each shoulder; through these holes cords were passed, which were, at the opposite ends, attached by way of a bridle to a horse, that had been penned up three or four days without food or water. In this manner, he led the horse to the margin of the river. The horse, of course, endeavoured to drink, but it was the province of the Indian to prevent him, and that only by straining at the cords with the muscles of the shoulder, without resorting to the assistance of his hands. And notwithstanding all the exertions of the horse to drink, his master succeeded in preventing him, and returned with him to his lodge, having accomplished his painful task.

The Wolf chief, one of the most eminent of the warriors of the upper village of the Minnetarees, on one occasion, sat five days, singing and lamenting, without food, on a small insulated and naked rock in the Missouri river. And it is firmly believed that he did not even palliate his urgent wants by tasting the water, during this long probation.

Many of the Minnetarees believe that the bones of those bisons, which they have slain and divested of flesh, rise again clothed with renewed flesh, and quickened with life, and become fat, and fit for slaughter the succeeding June. They assert that some of their nation, who were formerly on a hunting excursion, lost one of their party, a boy, and returned to the village lamenting his loss, and believing him to have been killed by the Sioux nation, with whom they were then at war. Some time afterward, a war party was assembled, that departed to revenge the supposed murder of the boy. During their journey, they espied a bison, which they pursued and killed. When lo! on opening the abdomen of the animal, what was their astonishment to observe the long lost boy, alive and well, after having been imprisoned there one entire year. Relieved from his animated prison house, he informed them, that, when he left his hunting companions, he proceeded onward a considerable distance, until he was so fortunate as to kill this bison. He removed the flesh from one side of the animal, and as a rainy inclement night was approaching, he concluded to take shelter within the body of the animal, in place of the viscera, which he had taken out. But during the night, whilst he slept, the flesh of the bison that he had cut off, grew over the side again, and effectually prevented his getting out, and the animal being restored to life, he had thus been pent up ever since.

Such anecdotes, however puerile and absurd they may be, if characteristic, lead us to a more accurate and complete knowledge of the manners and habits of the people, than still more copious general remarks and reflections.

The Minnetarees, in common with several other nations of our Indians, have the strange tradition of their origin, that they formerly lived under ground. "Two boys," say they, "strayed away from them, and absented themselves several days. At length they returned and informed the nation that they had discovered another world, situate above their present residence, where all was beautiful and light. They saw the sun, the earth, the Missouri, and the bison. This account so delighted the people, that they immediately abandoned their subterranean dwelling, and, led by the boys, arrived on the surface of the earth, at the spot which their villages now occupy, and where they have dwelt ever since.

Soon after they had established themselves in this new world, a party of strange men appeared mounted on horses. They attacked these wonderful Centaurs with their bows and arrows, and succeeded in killing one of them, on which the others fled. Not at first perceiving that the man and horse were two distinct animals, they were surprised to see the former fall to the earth, as if one part of the compound animal was dead, and the other part still active, having received no injury. They at length succeeded in securing the horse, and after admiring the beauty of his form, and becoming familiar with him, they proceeded to tie one of their young men upon his back with cords, that he might not fall off; the horse was then led cautiously by the bridle, until, finally, he became sufficiently fearless to ride alone.

They seem to have full faith in the notion that, at their death, they will be restored to the mansions of their ancestors under ground, from which they are intercepted by a large and rapid watercourse. Over this river, which may be compared to the Styx of the ancients, they are obliged to pass on a very narrow footway. Those Indians who have been useful to the nation, such as brave warriors or good hunters, pass over with ease, and arrive safely at the A-pah-he, or ancient village. But the worthless Indians slip off from the bridge or footway, into the stream that foams beneath in the swiftness of its course, which hurries them into oblivion, or Lethe. The Mandans, according to Lewis and Clark, have a tradition somewhat similar, and it strongly reminds us of the Alsirat of Mahomet, over which, it was supposed, that great leader was to conduct his Moslems to the bliss of futurity, whilst the unworthy were precipitated into the gulf which yawned beneath it.

CHAPTER XIII.

Death—Mourning for the Deceased—Physical Character—Senses—Manufactures and Arts—Domestic and Warlike Implements—War.

WHEN an Omawhaw dies, his kinsmen and friends assemble around his body, and bewail their loss with loud lamentation, weeping, and clapping of hands. Ong-pa-ton-ga, being once on a visit to St. Louis, observed a number of cattle gathering about a spot, where one of their kind had been recently slaughtered, smelling the blood, and pawing the earth; he said they behaved very like his own people, on the death of a relative.

They suffer the deceased to remain but a short time previously to interment, and often bear the body to the grave, before the warmth of vitality is entirely dissipated. The body is enveloped in a bison robe, or blanket, which is secured by a cord. It is then carried to the grave on the shoulders of two or three men, and followed by the greater portion of the mourners, without any order. The grave is an oblong square, of sufficient length, and four or five feet deep. The body is placed in the grave, and with it a pair or two of mockasins, some meat for food, and many little articles and comforts, the gifts of affection, to be used on the long journey which the deceased is supposed to be about to perform, in order to arrive at the Wa-noch-a-te, or town of brave and generous spirits. The grave is then filled with earth, and a small tumulus is raised over it, proportioned in magnitude to the dignity of the deceased. The relatives bedaub their persons with white clay, scarify themselves with a flint, cut out pieces of their skin and flesh, pass arrows through their skin, and if on a march, they walk barefoot at a distance from their people, in testimony of the sincerity of their mourning.

For a considerable time, they nightly visit the grave of the deceased, to lament over it. A sorrowing relative may be seen, of a bleak wintry night, bending over the grave, clad in a scanty robe, which scarcely conceals the middle of the back, as an additional self-punishment and unequivocal manifestation of grief.

For the death of a brave warrior, or of a chief, the lamentation is more general, and many of those, who visit the body previous to its removal, present to it blankets, bison robes, breech-cloths, and mockasins, which are sometimes thus accumulated in considerable numbers; of these presents, part is retained by the orphans, if any, but the greater number is entombed with the body. Over the grave of a person of this description, a kind of roof or shelter is constructed, of pieces of wood reared against each other, and secured at top, then sodded over with grass sod.

The season prescribed by custom for mourning, is a period of from seven to twelve months; during this time the violent expressions of their grief gradually diminish, and towards the expiration of the allotted season, the state of mourning is only manifested by the coating of white clay; and even this, like the black apparel of civilized mourners, is at length dispensed with, and with the same decorous gradation.

A cruel proof of heartfelt grief, is exhibited by some of the natives, on the upper parts of the Missouri; they cut off joints of their fingers; the individual cuts the skin and ligaments of the joint with his common eating knife, then places the joint between his teeth, and twists it off with violence, the teeth performing at the same time, the offices of a wedge and a vise.

In form, the Missouri Indian is symmetrical and active, and in stature, equal, if not somewhat superior, to the ordinary

European standard; tall men are numerous. The active occupations of war and hunting, together perhaps with the occasional privations, to which they are subjected, prevents that unsightly obesity, so often a concomitant of civilization, indolence, and serenity of mental temperament.

From this representation of the physical man, it is obvious that our observations do not correspond with those of Humboldt, regarding the natives of Canada, Florida, and New Spain, in as far as he represents them with the "squat body."

The forehead retires remarkably backward, and the posterior part of the head, (occiput) has a flatness of appearance, attributable, perhaps, to the circumstance of its having rested so constantly during infancy, on the surface of a board, or on the scarcely less yielding interposed pad or pillow. Yet that organ, to which in the phrenological system, the seat of amativeness is referred, although not usually very prominent, is still marked and distinct.

The fascial angle of the cranium has been represented by Blumenbach at 73 degrees, an obliquity which induced him to place the American Indian in his series of the variaties of the human race, as the fourth in number.

But his observations were made upon the cranium of a Carib, than which people, as Humboldt justly remarks, "there is no race on the globe in which the frontal bone is more depressed backwards, or which has a less projecting forehead." This observation will not rigidly apply to the western Indian, who certainly possesses a greater verticality of profile. Agreeably to the mensurations of Doctor Harlan, a cranium, which we obtained on the plains of the Platte, exhibits an angle of 78 degrees—A Wabash male 78°, female 80°, and a Cherokee only 73°.

The hair is coarse, black, glossy, and dense upon the head, sparse and slender upon the chin, independently of the custom of extirpating it, but although the hair is certainly oval in its transverse section, yet we could not perceive, that in this respect, its proportions exceeded our own.

The line of the direction of their eyes is nearly rectilinearly transverse, being in this respect intermediate between the arquated line of the eyes of the white man, and that of the Indians of New Spain, who, according to Humboldt, have the corner of the eye directed upward towards the temples.

The nose is generally prominent, and either aquiline or Roman, with the wings not more dilated than those of white men. This form of nose is so prevalent, as to be regarded as the most beautiful; it is no small compliment to tell a person that his nose is like that of a mule; and beauty is indicated in their language of signs, by placing an arquated finger upon the face in imitation of the aquiline curve. The *pug-nose*, and the more common form of the noses of the white Americans, of a concave outline, are regarded as remote from the standard of beauty.

The lips are more tumid than those of the white American, but very far less so than those of the negro.

The lower jaw is large and robust; the teeth are very strong, with broad crowns. The chin is well formed.

The cheek bones are prominent, but not angular like those of the Mongul, and stamp a peculiarity on the contour of the face, characteristic of the American Indian.

The expression of the countenance is austere, often ferocious.*

Very few of them are left-handed, perhaps even a smaller number of them use the left hand in preference to the right, than is observable among white men.

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* The gravity of the Indian is almost proverbial; he will smile, but he rarely laughs. He does not indulge in badinage, or unnecessary remarks respecting the weather, merely for the purpose of talking, and generally addresses his companions in a low voice, and with few words, excepting in council, when his elocution is loud, rapid, and vehement; the voice is full, harsh, and somewhat guttural. The squaw, not unfrequently, offers a perfect contrast in this respect, in her vivacious demeanour, shrill loquacity, and pleasant smile, and laugh, readily excited.

The squaw differs from the males, in having a more squat figure, or is shorter and more thick bodied, with a much broader face.

The colour of the Indian is, according to Volney, that of the skin of smoked bacon ham. It is sufficiently obvious that this colour is independent of climate; those parts of the body, which are, and, agreeably to their representations, always have been, perfectly shielded from the action of the rays of the sun, from their youth upward, are, notwithstanding, of the same tint with the face, which is never covered.

In walking they preserve a perfectly upright carriage of the person, without any thing of the swinging gait so universal with the white people, which is regarded by them as excessively awkward, and which they imitate in their sports to excite the merriment of the spectators, though not in the presence of those, whom they thus ridicule.

In stepping, the feet are universally placed upon the ground in a parallel manner with each other; they say that turning out the toes in walking, as well as turning them inward, is a very disadvantageous mode of progressing, in high grass or in narrow pathways.

The peculiar odour, diffused by the body of the Indian, seems to be caused, not so much by the cutaneous transpiration, as by the custom of rubbing themselves with odoriferous plants, and with bison grease. They also sometimes make necklaces of a sort of sweet-scented grass, and suspend small parcels of it about their persons. The various kinds of pigments, with which they overspread their persons, may also be partially operative in producing this effect; and the ninnegahe, which they are so constantly habituated to smoke, is doubtless another agent.

The odour of the Indian is rather agreeable than otherwise to many, and that diffused by the persons of the *Pawnee* war party near the Konza village, increased by a profuse perspiration from the violence of their exercise in running, was rather pleasant to some of the members of our party. The Upsarokas or Crow Indians, are said to anoint themselves with castor.

To the acute sense of smelling of the Indian, the odour of the white man is far from pleasant, and is often particularly remarked by the squaws to be offensive.

Their sense of hearing is remarkably acute; ordinary conversation amongst the men, as we have before observed, is conducted in a low tone of voice; often when you suppose from the compass of the speaker's voice, that he is addressing a person at his elbow, he is, in reality, directing his discourse to one on the opposite side of the room, or at a considerable distance. The ordinary conversation of the women is in a much louder tone than that of the men. Partial deafness, however, is not uncommon.

The memory of the Omawhaw is exceedingly retentive.

The Omawhaw seldom renders himself unhappy with gloomy anticipations of the future, but almost literally takes "no care for the morrow." He will say to his squaw, "cook what meat you have, for the Wahconda will give us more to-morrow, and if not to-morrow, next day, and if never, let us eat what we have got."

They have but little mechanical ingenuity, but an individual of this nation, who is now no more, without acquiring any knowledge of the white people, as far as we could learn, mended the guns and traps of his countrymen, when not too seriously injured. But they have not attempted to repair either, since his death.

They rarely construct skin canoes; they make war-clubs, rude saddles, hair ropes, stone pipes, wooden bowls, horn spoons, and many personal ornaments.

The squaws make mockasins and leggings variously ornamented; and handsome necklaces, wrought with beads of different colours, which are symmetrically strung upon red silk, or thread coloured with vermillion. In the manufacture of this common, and much admired article of dress, ten double threads are attached by one end to a small thong or shred of leather, which is firmly stretched and fixed transversely to the work; each double thread is placed at such a distance from the adjoining ones, as to give room for the beads. These are then strung on, one upon each double thread; by this operation a transverse row of beads is formed upon the work parallel to the thong; this being done, the left hand double thread is passed to the right, not over and under, but through all the other double threads, parallel to, and in contact with the row of beads, and in this position occupies the situation of woof or *filling*; but its extremity is continued along on the right side of the work, so as to resume, in that portion of its length, the character of warp or chain. Another row of beads is now put on; after which the next left hand double thread, is passed through each of the others to the right of the work, as the previous one had been.

They also make handsome garters for supporting the leggings below the knee, of the breadth of the hand; they are formed of beads strung on worsted yarn.

Their art of painting is very rude, yet they manage to give some idea of a battle, by graphic representations in colour, on a bison robe. In the same manner are depicted the various animals, which are the objects of their hunts. These robes are also decorated with blue, red, and black, broad lines, forming various designs; indeed it is very common to see a robe thus ornamented, worn by an Omawhaw.

The art of sculpture is also in its rudest state, and is almost limited to the ornamenting of the war-club with indented lines, forming different angular figures.

Their persons are often neatly tattooed in straight lines, and in angles on the breast, neck, and arms. The daughters of chiefs, and those of wealthy Indians, generally are denoted by a small round spot, tattooed on the forehead. The process of tattooing is performed by persons, who make it a business of profit. Their instrument consists of three or four needles, tied to the truncated and flattened end of a stick, in such an arrangement that the points may form a straight line; the figure desired is traced upon the skin, and some dissolved gun-powder, or pulverized charcoal, is pricked in with this instrument, agreeably to the figure. The operator must be well paid, and hence it is not every one that can conveniently sustain the expense, of having this distinguishing mark, placed on the forehead of his children.

Their astronomical knowledge is very limited. They distinguish the north star (Polaris), and are aware of its being apparently stationary, while the others seem to revolve. Venus is known by the name of *Mi-ka-ka-ton-gah*, or Big Star. The constellation of the seven stars, (Pleiades) is called *Ta-pa*, or deer's head. The constellation of the great bear, (Ursus major,) is distinguished by the term *Wa-ba-ha*, or car for transporting sick or wounded persons on a march. The galaxy is called *Wahconda-ojunga*, or the path of the Master of Life. When the moon is eclipsed, they say *Mi-om-bee-tea*, or the moon is dead; and when the sun is eclipsed, they say the sun is dead. A comet they denominate *Mi-ka-ka-no-re*, or blazing star; this name, at least, was given to the comet of 1811; they regarded it as portending the death of some great chief, and as it happened, one of the great Pawnee chiefs did die the same year, which confirmed them in their notion. The three stars of Orion's Belt, are called *Mi-huh-ee* or the goose-foot.

Wangewaha the Hard heart, chief of the Ioways, has made himself considerably acquainted with the manners of the white people; he surprised Mr. Dougherty one day by inquiring, if it is true that the earth revolves round the sun; he was of course answered in the affirmative; when a sarcastic Indian of a group sitting near, was overheard to say in a low voice, that it was indeed a pretty story to tell them, when any person could see the sun rise there, pass along in that direction, and set there, (pointing with his finger to the apparent course of the luminary.)

The day is divided into morning, noon, evening, and night; and respectively indicated by the words, *Cas-aht-te*, *Me-o-kans-ka*, *Paz-za* and *Hon-da*. Any particular hour of the day, is denoted by pointing to the apparent place of the sun at the specified time. The years are denoted by the number of winters, and the months by lunations.

Their geographical knowledge of the country, over which they roam, is remarkably exact. They know intimately every river and creek in the vicinity of the Missouri, from Grand river up to the Arickaree nation, on the left side of the river, and as far down as the Osage river on the right, and south as far as the Black hills, together with their courses and distances.

Mr. Dougherty, accompanied with two or three young Indians, arrived at an Omawhaw hunting encampment, late in the evening, and, after inquiring at several of the lodges, at length entered the one in which he intended to remain. Being asked by which way he had come, he pointed out, as he thought, the true direction; at this his fellow travellers smiled, and told him he was mistaken. He was not undeceived, till he went out of the lodge to observe the direction they had indicated, when he became satisfied of their correctness. They had, however, been less frequently in that part of the country, than he had been; but they had, without doubt, instinctively noted all the changes of the direction, which they had made in winding through the temporary village, for they could not avail themselves of previous local knowledge.

But although they are remarkably accurate, in their knowledge of the proper direction in which to travel, in order to reach a given point, yet they are often lost during foggy days, or during heavy snow storms.

Their culinary utensils are few in number, and simple in kind. The original earthenware pots are now rarely used by the nations on the lower part of the Missouri, being substituted by brass kettles, which they procure from the traders in exchange for their peltries. The Pawnees, however, whose intercourse with the whites has been less considerable, than that of the nations bordering more closely on the Missouri, still employ earthen vessels, and yet continue the limited manufacture of them. These vessels are not glazed, and resemble in composition the antique fragments of Indian earthenware, found in various parts of the United States; the mementos of a numerous people, that have been destroyed by obscure causes, as well as by the avaricious policy, and cruelly unjust and barbarous encroachments of a people, professing the mild doctrines of "peace on earth and good will to men."

Food is served up in wooden bowls, of a very wide and simple form, and of various sizes, generally carved, with much patient application, out of a large knot or protuberance of the side of a tree. The spoon is made of bison horn, and is of a large size; the handle, variously ornamented by notching, and other rude carving, is elevated into an angle of fifty or sixty degrees with its bowl, which is about three inches wide, by about five in length; a size, which, in civilized life, would be inadmissible.

The only implement of husbandry is the hoe; if they have not an iron one, they substitute the scapula of a bison, attached to a stick in such a manner, as to present the same form. The traders supply them with axes of iron.

The weapons used in hunting are bows and arrows, and guns. The bow is about four feet long, of a simple form, composed of hickory, or hop-horn beam wood, (ostrya virginica,) or bow-wood, (maclura aurantiaca of Nuttall,) the latter being greatly preferred. The cord is of twisted bison, or elk sinew. The hunting arrow is generally made of arrow-wood (viburnum), about two feet in length, of the usual cylindric form, and armed with an elongate-triangular spear head, made of sheet iron, of which the shoulders are rounded, instead of the ordinary barbed form; it is firmly affixed to the shank by deer sinew, and its flight is equalised by three half webs of the feathers of a turkey, neatly secured near its base, in the usual manner. The war arrow differs from that used for hunting, in having a barbed spear-head, very slightly attached to the wood, so that if it penetrate the body of an enemy, it cannot be withdrawn, without leaving the point in the wound.

The arrows are contained in a quiver, which is slung obliquely across the back, and which is generally made of Cougar skin, with the tail of the animal dangling down from the upper extremity; attached to this quiver is also a skin case for the bow, when not in use. To bend the bow requires the exertion of considerable force, dexterously applied; for this purpose three fingers are placed upon the string, whilst the thumb and index finger grasp the base of the arrow, where it rests on the string; the wrist is defended from the percussion of the string, by a guard of leather. The smooth bored gun is preferred to the rifle, the latter being too heavy for their use. Those called Mackinaw guns are greatly preferred to those which they more commonly procure from our traders, being far more substantial and serviceable.

They make use of no traps, excepting those for catching beaver, which they obtain from the traders chiefly on loan. The hooks which they use in fishing are bought of the traders. They have no fishing nets.

We saw no other domestic animals in the Indian villages than horses, mules, asses, and dogs. The first are by no means elegantly formed, but they are hardy and serviceable. The Indians are generally cruel horse-masters, perhaps in a great measure through necessity; the backs of their horses are very often sore and ulcerated, from the friction of the rude saddle, which is fashioned after the Spanish manner, being elevated at the pummel and croup, and resting on skin saddle cloths without padding. They ride extremely well, and make great use of the whip and the heel. The former is attached to the wrist by a broad band, which passes through a hole perforated near the end of the handle. The handle is about fifteen inches long only, and very stout; that of the whip of Hashea, the Oto warrior, is the section of a gun-barrel. The lash is composed of two thongs of bison skin, from one fourth to a half an inch wide. These are alternately passed through small longitudinal slits cut in each, and, when finished, exhibit, on a cursory view, the appearance of a flat plait, thick, and longer than the handle.

The dogs of the Konzas are generally of mixed breed, between our dogs with pendant ears, and the native dogs, whose ears are universally erect; the Indians of this nation seek every opportunity to cross the breed. These mongrel dogs are less common with the Omawhaws; while the dogs of the Pawnees, generally, have preserved their original form.

No regular sentinels are appointed to watch during the night; but many of the young men, who are moving about the greater part of the night, on their errands of love, often singing and hallooing to excite the attention of their mistresses, are the only guards of the safety of the village from surprise. If, however, the nation have reason to believe that the enemy is near at hand, or that there is a probability of an attack, they are necessarily vigilant; young warriors volunteer to look out at different points, or are requested to do so by the chiefs.

Wars generally originate in the stealing of horses, and the elopement of squaws; they are, sometimes, the consequence of infringing on each other's hunting grounds. Hostilities are generally conducted by small predatory parties, which are originated and formed under the influence of some approved warrior. An individual, of this description, having determined to endeavour to assemble a war party, as a first step, paints himself over with white clay; he then passes through the camp, or village, crying aloud to the Wahconda, and requesting the young warriors of the nation to have pity on him, and accompany him to strike at the enemy; he then ascends some hill or elevation, or repairs to the woods, and there continues for some time his ejaculations. The following day he gives a feast, to all such as are willing to accompany him, and it is distinctly understood, that all of those who partake of his hospitality on this occasion, are enlisted for the excursion. He occasionally repeats this crying and feasting, until a convenient period can be assigned for their departure. During this interval he also occupies himself in *making medicine*, hanging out his medicine bags, &c. At his feasts he harangues his men, telling them that they must endeavour to make themselves known to the nation, by their warlike deeds.

This leader the French distinguish by the name of *partizan*, and the Omawhaws *No-doh-hun-guh*; his medicine parcel, upon which much reliance is placed, for the successful termination of their adventure, contains, almost always, the skin of a sparrow hawk, (Falco sparverius) and many small articles, such as wampum, beads, and tobacco, all attached to a belt, but carefully and neatly enveloped in bark, and tied around by strips of the same material, forming a cylindrical figure, of about twelve inches in length.

This is suspended upon the back or shoulders of the partizan, by its belt, which passes round his neck.

Having their mockasins, leggings, guns, bows and arrows, spears, war clubs, and scalping knives prepared, each man furnishes himself with some provisions, and they all depart silently during the night, led by the partizan.

On their rout towards the enemy they proceed with great caution, and constantly send forward runners, or spies, to reconnoitre. When encamped, some individuals are vigilant during the night, but if they suppose themselves to be distant from the enemy, they keep no watch.

The medicine bag is not permitted to touch the ground; accordingly on encamping, it is carefully suspended to a forked stick, which is stuck firmly in the soil; the ceremony of smoking to it, is then performed, the stem of the pipe being occasionally directed towards it, the heavens, and the earth. After this ceremony, if the party is in the vicinity of the enemy, the partizan places the medicine bag about the neck of one of his trusty warriors, and, whispering in his ear, directs him to take two or three men, and look carefully about for signs of the enemy.

On the return of this messenger the partizan runs to meet him, receives his report in a whisper, takes the important charge from his neck, and whilst returning it to its place, communicates the intelligence he has received to his party; "no sign of the enemy has yet been discovered, but have patience, my brave young men, the Wahconda will soon have pity on us, and show us the enemy we so anxiously seek." If, on the contrary, the enemy is discovered, his position and numbers are reconnoitred, and the party prepares to attack them. The sacred medicine bag is now opened by the partizan; the envelop is rejected, and the remainder is suspended from his neck, with the bird skin, wampum, &c. hanging down before, from the belt. This is a signal indicating that a blow must be struck. The party then paint themselves and smoke if time admits of it. The partizan at length gives the wished for order, and the whole move onward, with slow and cautious steps, in order to surprise the enemy; but if discovered, they rush on with impetuosity, and without any regular order. If the scene of the contest lies in the forest, they shield themselves behind trees of small diameter, when at the proper distance, from whence they discharge their missiles. If the attack is made in the open plain, where no shelter offers, they leap about from one side to another, and preserve a constant state of activity, for the purpose of preventing any steady aim from being taken at them, by their adversaries.

It is not the mere shooting down of an enemy, that confers great honour upon a warrior; this, the Indians say, can be done by any person, however cowardly he may be. But high distinction is due to the gallant soul, that advances upon the field of battle, and captures an enemy, or who first strikes, or even touches the body of a fallen enemy, in presence of the friends of the deceased, who are generally watching their opportunity to revenge his death.

This is, indeed, an extraordinary proof of courage, as the act is not to be accomplished without the greatest hazard of life; the adventurer is obliged to expose himself, often, to a great number of assailants, besides the danger of falling into an ambush, in attempting to strike the decoy. It is this *striking*, that is numbered amongst their war feats by the warriors, at their dances.

The capture of a prisoner confers the highest honour on the captor. Striking an enemy, whilst active, appears to be the second in rank, of their great martial achievements. Striking his dead, or disabled body, confers the third honour. Capturing a horse may be regarded as the fourth; presenting a horse to any person, the fifth, and the shooting, or otherwise killing an enemy, by a missile, is the sixth in point of rank of military deeds, in the estimation of the Omawhaws. The taking of a scalp is merely an evidence of what has been done, and, of itself, seems to confer no honour.

The prisoners are well guarded, and not roughly treated, unless a strong party of the enemy are in pursuit, when they are put to death.

On the battle ground, the wounded of the vanquished are killed, and their dead are cut and hacked by the victors; but if it should chance to be accessible to the squaws, they perform the chief part in this tragedy. They sever the limbs from the bodies, and attaching them to strings, drag them about with vociferous exultation; etiam genitalia excidunt, and tying them about the necks of their dogs, they drive them before them, with much shouting, laughter, noise, and obscene expressions.

A war party, after having struck a blow upon the enemy, return with rapidity towards their village.

They leave the mutilated carcasses of the slain, upon the contested field, a prey to the wolves and vultures. Their own dead are covered with wood or stones, and their wounded are transported on litters, on the shoulders of others, or if they have horses with them, upon cars of a very simple construction. Two poles are attached to the neck of the horse, in the manner of shafts, which trail upon the ground behind. These are so connected, behind the horse, with cross pieces, lashed on, that a bison robe can be suspended to them, for the reception of the wounded person.

If the attack is made during the night, or if the party has only captured horses, unobserved by the enemy, a mockasin or arrow, is left in a conspicuous situation, to inform the enemy of the nation to which the aggressors belong.

Large war parties, sometimes divide into smaller parties, in order to attack simultaneously at different points. Each of these parties on its return, at its different encampments, inserts small painted sticks in the soil, pointing to the rout they have taken. They also peel off a portion of the bark from a tree, and on the trunk thus denuded, and rendered conspicuous, they delineate hieroglyphics, with vermillion or charcoal, indicative of the success or misfortune of the party, in their proceedings against the enemy. These hieroglyphics are rudely drawn, but are sufficiently significant, to convey the requisite intelligence, to another division of the party, that may succeed them. On this rude chart, the combatants are generally represented by small straight lines, each surmounted by a head-like termination, and are readily distinguishable from each other; the arms and legs are also represented, when necessary to record the performance of some particular act, or to exhibit a wound. Wounds are indicated by the representation of the dropping of blood from the part; an arrow wound, by adding a line for the arrow, from which the Indian is able to estimate, with some accuracy, its direction, and the depth to which it entered. The killed are represented by prostrate lines; equestrians are also particularized, and if wounded or killed, they are seen to spout blood, or to be in the act of falling from their horses. Prisoners are denoted by their being led, and the number of captured horses is made known by the number of lunules, representing their track. The number of guns taken, may be ascertained by bent lines, on the angle of which is something like the prominences of the lock. Women are portrayed with short petticoats, and prominent breasts, and unmarried females by the short queues at the ears, before described.

A war party, on its return, generally halts upon some elevated ground, within sight of the village; and if they have been successful, they sit down and smoke their pipes. The villagers on discovering them, rush out to meet them, and receive a brief relation of the events, that have occurred during the expedition.

All then return to the village, exhibiting by the way, the greatest demonstrations of joy, by discharging their guns, singing war songs, &c. The scalps, stretched upon hoops, and dried, are carried upon rods of five or six feet in length.

Arrived at the village, some of the squaws, wives to the warriors of the party, assume the dress of their husbands, and, with the rods bearing the scalps in their hands, dance around a large post, reddened with vermillion, and, in concert with the young warriors, sing the war and scalp songs; the young warriors occasionally step into the ring of the dancers, and all keep time, with dance and song, to the loud beat of the gong. Into this dance are also admitted the relatives of the war party.

This barbarous dance appears to delight them, and particularly the squaws, who are the principal actors, more than almost any other of their enjoyments.

Indeed, it is to the squaws, that many of these exertions are attributable, as those, whose husbands have not been successful in war, frequently murmur, saying, "you have had me for a wife, a long time, and have never yet gratified me with the scalp dance."

Those squaws, whose husbands or relatives have been killed during the excursions of the party, take no part in this blissful dance, but rub themselves with clay, and lament.

This dance is repeated every night for two or three weeks, after which it is renewed occasionally for a twelvemonth. The scalps are often cut into slips, that many of the dancers may be accommodated with them; but this was never done with an intention to deceive, respecting the actual number of the enemy killed. After the termination of this ceremony, the scalps are either thrown away, or are used to decorate the leggings of the warrior, or to suspend from his medicine bag, or from the bridle of his horse.

Soon after the return of the party, the principal warriors, are invited to feasts by different villagers, where they recount the events that have transpired during their absence. They narrate the mode of approaching the enemy, the onset, the battle, all the little particulars of which are detailed; but they seem to dwell with particular pleasure on the conduct of individuals of the enemy, as it appeared immediately before they received the death blow; if there was any movement of the body, or emotion exhibited upon the countenance of the victim, that betrayed a want of firmness, or fear of death, at that awful juncture, the account excites much laughter in the audience. If the disabled individual was so imbecile, as to shrink from a blow of the tomahawk or war-club, he is ridiculed as a coward. If he is said to have cried for quarters, or begged for mercy, or to have held up the palm of his hand towards the victor to appease his vengeance, the account is received with ridicule and laughter, at the expense of the deceased. If, on the contrary, he is said to have perished with that stoicism and contempt of death, which is regarded as worthy of the Indian warrior, the auditors, although they may smile with pleasure at the death of an enemy, yet pay due honour to his manes, saying he was a brave fellow; and they do not fail to applaud the bravery of his victor also.

All those of the party, who have first struck a body, or taken a prisoner, paint themselves black, and if any strangers are in the village, they put on their *crow*, and appear before them, or near them, and sing their war-song in which their exploits are detailed.

The prisoners are differently treated according to their sex, age, and qualifications. Of the squaws they make slaves, or rather servants, though these are sometimes advantageously married. To the young men the task of tending horses is commonly assigned; but the children are generally adopted into their families, and are treated in every respect as their own offspring; when arrived at maturity they are identified with the nation, and it would be an insult to apply the name of their own countrymen to them.

CHAPTER XIV.

War—Negociation for peace—Revenge—Self-esteem—Hospitality—Mimickry.

An individual warrior not unfrequently goes to war unaccompanied; but parties are generally made up for this purpose, in the manner before mentioned. In cases of extraordinary provocation, the whole nation of warriors, marches in a body to attack the enemy, under the direction of the principal chief.

More than twenty years ago, the Omawhaws marched against the Pawnee Mahas or Pawnee Loups. They encountered them on their hunting grounds, between the Platte and Quicourre rivers, in the prairie, where they attacked them, killed sixty, and wounded a great many; after securing a number of prisoners, and many horses, they returned with their booty, having lost but fifteen warriors. Peace was soon after concluded between the two nations, which has not been since violated, excepting on one occassion, when their dispute was bloodless, and but of short duration.

Sometime after this event, *Mot-tschu-jinga* or the *Little grizzly bear*, a brave and distinguished warrior of the nation, with two or three attendants, visited the village of the Pawnee republicans, in order to perform the calumet dance before the people. This was a band with whom they were barely at peace. The republicans siezed him, flogged him, cut off his hair, broke his pipe, forced him to drink urine mixed with bison gall, and drove him from the village without food. These extraordinary and most humiliating indignities, aroused within him, the fiercest spirit of vengeance. He returned, and related his misfortune to his people, who, penetrated with indignation, promptly assembled in arms, and led by the great Washingguhsahba or Black Bird, marched to revenge such unheard-of indignity. When within a short distance of the devoted village, they placed their squaws in a secure situation, under a proper guard, and proceeded to the attack. They urged the contest so fiercely that the enemy was driven from lodge to lodge, until four lodges only were left to them, in which they succeeded in defending themselves; the town, with the exception only of the four lodges, was then burned to the ground, and the victors retired after destroying nearly one hundred of the enemy, and wounding a great number, with the loss, to themselves, of only fifteen warriors.

Under the same great leader, the nation, on another occasion, attacked the Puncaws; this act was induced by the practice of the latter of stealing squaws and horses from the Omawhaws. The Puncaws, for the purpose of defending themselves against the fire of the enemy, threw up an earthen embankment; but finding, notwithstanding the protection it afforded them, that their numbers rapidly diminished under the galling fire opposed to them, they determined to sue for peace; for this purpose two pipe bearers were sent out successively towards the enemy, but they were both shot down. A chief then dressed up his handsome daughter, and sent her forth with a pipe to the Omawhaws. This mission was respected, the stern victors were vanquished by beauty, the proffered pipe was accepted, and unhesitatingly smoked, and a peace was concluded, which has not since been infracted by the Omawhaws. Soon after the death of Washingguhsahba, his successor Mushchinga, the Big Rabbit, led the nation against the Otos, whom they attacked in their village. It was the intention of the assailants to burn the village, and exterminate the nation. With this view they provided themselves with dry grass, which was twisted into the form of thick ropes, and secured to their girdles. When within the proper distance they despatched a detachment to take ambush on the opposite side of the village, then kindled a fire, at which they lighted the grass torches, and rushing into the village succeeded in setting many of the lodges on fire, by fixing the torches to them. Such was the fury of the unexpected attack, that the Oto warriors were driven from the village, but falling into the ambuscade, they fought their way back to their lodges, with much slaughter. A heavy fall of rain now commenced, which rescued the remaining Otos from entire destruction. The conflagration was quickly extinguished, the guns and bow strings of the invaders became useless, and the Otos sallying out with fresh weapons, forced them to a precipitate retreat. The loss was severe on both sides, but the Omawhaws succeeded in carrying off almost all the horses of the enemy, besides a number of prisoners, furniture, &c. The war continued between these two nations, until the pacification, which was accomplished through the agency of Lewis and Clark, and has continued to the present day.

Reverting to the period of the government of Washinggahsabba, we are informed that the Padoucas once approached the nation, and stole a number of horses, when this chief assembled his warriors, and pursued them; observing the tracks of their feet in the soft earth, he discharged his gun repeatedly into them, declaring that thereby he would cripple the fugitives so entirely that it would be easy to overtake and destroy them. Accordingly he did overtake them, and, agreeably to the Indian account, they were unable to defend themselves, and were all destroyed but two or three, who escaped, and failed not to inform their people of the wonderful medicine of the victor.

The last martial expedition of Washinggahsabba terminated disastrously for his nation. He led his warriors against the Konzas, halted them near the village of that people, and singly rode round the village, repeatedly discharging his gun at the inhabitants, as he passed swiftly by them. As soon as the Konza warriors were collected, they sallied out in pursuit of the Black-bird, who had now joined his party. The parties closed, and intermingled in fight, and the contest was obstinate and protracted. An Omawhaw pierced the thigh of a Konza with an arrow; the latter called aloud to inquire the name of his adversary, and was answered, No-zun-doj-je, (he who does not dodge). "My name," said the Konza, "is———(he who kills brave men,) so come on, we are happily met." They approached each other, leaping laterally and capering, the Omawhaw discharging his arrows, and the Konza endeavouring to get aim with his fusee; the latter at length succeeded, and shot his opponent.

The conflict at length became too warm for the Omawhaws, who retreated eight miles, disputing the ground, however, the whole distance. They now arrived at the prairie, on which we encamped on the evening of twenty-fourth of August last.

Here the Omawhaws again made a stand, and fought the principal battle, but were overpowered, and obliged to fly, leaving their numerous killed and wounded to the vengeance of the enemy.

These two nations still continue hostile to each other.

It is said that, during the youth of Washingguhsahba, he was taken prisoner by the Sioux. That the town of the Omawhaws was then on the opposite bank of the Missouri, at the mouth of the stream called by Lewis and Clark, Floyd's river, and that the nation had not, at that time, been long resident there.

Sometime previous to the variolous mortality in the Omawhaw nation, several bands of Sioux, in conjunction with the Shienne nation, attacked them on their return from a summer hunt, and overpowered them by numbers.

A few years since, the Pawnees made a general attack upon the Konza village. They were all mounted on horseback, and rode furiously about whilst they fired into the Konza lodges. The principal chief of the nation, *Burning-heart*, ran through his village, calling out to his warriors to remain quietly in their houses, for the present, and not show themselves to the enemy, or return their fire, in order to give them time to tire out their horses, by continued action. After a while a *few* shots were returned, to prevent the Pawnees from rushing into the town itself, and when the horses appeared to be sufficiently fatigued, Burning-heart despatched two strong parties from the opposite end of the village from that upon which the attack was made, one of which, moving rapidly upon their hands and knees, gained a ravine, along which they ran until they gained the enemy's rear; they were here joined by the other party, which had gained the same situation by means of a lower prairie, along the bank of which they passed unperceived. Finding themselves thus out-generalled, the Pawnees were under the necessity of charging through the enemy, and flying with jaded horses before them. So rapid was the pursuit, that the Pawnees were obliged to precipitate themselves into the ravines, over which they must pass, to the destruction of many of their horses. Finally they made their escape, with the loss of eighty men, and the greater part of their horses.

When a hunting party is suddenly attacked by an enemy, the squaws, whilst their husbands are engaged in opposing the enemy, sedulously occupy themselves in digging basin-shaped pits with their hoes, for their personal security, and stooping down in them, escape the missiles of the contending parties; their husbands, if too hard pressed, also retreat to these cavities, from which they can continue the action, with very little exposure of their own persons, whilst the enemy possesses no shelter.

Besides the national battles, in which great waste of life occurs, small war parties, or such as have been already described, are almost constantly in motion, and are also destructive.

The Serpent's Head, a distinguished Oto warrior, assembled a war party of thirty men, and moved against the Konzas. Within a few miles of their village, at a narrow defile on Blue-earth creek, he placed his party in ambush, and with two or three selected men, he advanced to within a hundred yards of the village. At the dawn of day a Konza, having occasion to walk a short distance, was attacked by the Serpent's Head singly, who buried his tomahawk in his head, and took off his scalp, within view of many of the villagers. These seized their weapons, and immediately pursued the fugitives, until they reached the pass, where, falling into the ambuscade prepared for their reception, they lost seven of their number, and were obliged to retreat precipitately, to seek the protection of the main body of their warriors, who, they supposed, were now in pursuit, and at no great distance in the rear.

The Otoes, after striking and scalping the slain, proceeded on their way home, at a very moderate pace, not caring to elude the powerful force, which they well knew must be hard by. The Konza warriors, dashing on at full speed, at length discovered the retreating band, moving at their leisure over a prairie, and immediately attacked them. The Otoes withstood the shock of the overwhelming force for some time, until, losing a number of their party, they were under the necessity of seeking safety in flight.

An Oto hunting party, consisting of five lodges, was encamped in the vicinity of the Konza hunting grounds; two or three of their number, who were at a distance from their companions, encountered a young Konza warrior, who deliberately approached ,them, and when sufficiently near, discharged his gun at them, but was immediately shot down.

The Otoes suspecting, from some appearances, the proximity of a large body of the enemy, precipitately returned to their party, and hastened to place themselves in an attitude of defence. They availed themselves of three large logs, which had fallen so as to form a triangular area, into which they removed their effects, and strengthened the defences in such a manner as to afford them some security.

The squaws dug cavities in the earth for themselves, and their children, as an additional security.

Scarcely were these preparations finished, when the whole body of the Konzas warriors made their appearance, and commenced the attack on this little body of fifteen Otoes. These gallant fellows, thus advantageously posted, notwithstanding the fearful odds opposed to them, returned the fire of the enemy promptly, and at length succeeded in repulsing them, with the loss of two or three of their own men, and after having killed about fifteen of the Konzas.

The following trait in the character of a distinguished warrior is worthy of being recorded. During the residence of the Pawnees on the Platte at the cedar hills, about fifteen or eighteen years since, the Otoes were frequently at war with them, notwithstanding their own great numerical inferiority. On one occasion, during a pacific interval, some Otoes followed the Pawnees, who had just left their village on a national hunt, and stole two horses from them. This outrage, committed in time of peace, highly incensed Wassacaruja: "If you wish for war," said he to the offenders, as he mounted his horse, "you shall have it." He rode immediately, in his anger, to the deserted Pawnee village, and setting fire to the lodges, burned them all to the ground.

On their return the Pawnees, finding their village destroyed, they marched in a body to the Otoes, and demanded satisfaction for the injury they had received. Wassacaruja, perhaps, penitent for his rash act, and no doubt now wishing to avert the hostilities which he had incited, advanced to them at once, saying "I am the person who burned your town, kill me if you will." This however the Pawnees declined, and were at length reconciled to their loss, by presents of horses and merchandize. They then removed from the vicinity of the Otoes, and erected their present village on the Loup fork of the Platte.

The Otoes, as well as the Konza warriors, will not, on any consideration, sit down whilst on a war excursion, until evening; they will lie down, and stoop down, but they must not rest upon the ground in a sitting posture.

An Upsaroka or Crow war party, who were hovering about the Rickaree village, waiting an opportunity to strike a blow, observed a boy entirely alone, and at a distance from any succour; having a boy belonging to the party much of the same size, they permitted him to attack the Rickaree boy singly; the assailant was successful, and brought off the scalp of the enemy.

One of the warriors then took the scalp, and rode with it near to the village in defiance.

During the last seven or eight years, since they have become influenced by the agents of the United States, the Omawhaws have entirely abstained from carrying the war into the country of their enemies; no unprovoked parties have been sent out, and the nation, agreeably to the injunctions of the agents, restricts its military operations solely to defensive warfare. Partial attacks have been made upon them during this time, which have always been promptly repelled, sometimes with considerable slaughter.

That implicit confidence may be justly reposed upon, at least, some of this people, the following anecdote will testify.

In the year 1815 the Ioways came to the mouth of the Platte river, and found there a trader engaged in trafficking with the Otoes. They attempted to take possession of his merchandize by force, but were opposed and repelled by the Otoes, who determined to protect their trader. The Ioways, however, threatened the trader to plunder him, as soon as the Otoes should depart, whose provisions being now nearly exhausted, the fears of the trader for his safety became more excited, in proportion as the time of their departure approached. He despatched a boy, with a letter to his partner Mr. Lisa, then trading at Council Bluff, a distance of thirty miles, informing him of his situation, and of the fact, which had but then come to his knowledge, that the Ioways had formed a small party for the purpose of visiting Council Bluff, and committing some depredations there.

On the reception of this intelligence Mr. Lisa sent a favourite Omawhaw, Wa-co-ra, to accompany the boy with his reply.

In the meantime the Ioway party had set out, and after travelling a considerable distance, the partizan became lame, and was left with a companion on the way.

Wacora, fortunately, did not meet the party, but he saw the partizan with his companion, calmly seated in fancied security, amongst the thick bushes. He crept silently near to them, who were distinctly recognized by the boy, and discharging his gun, broke the arm of the partizan's companion.

The partizan immediately perceiving the aggressor to be an Omawhaw, exclaimed, "I am a half Omawhaw, I was going to war against the Long knives, not against the Omawhaws, shoot no more, you have wounded one of us." Wacora answered, "I am a Long knife," upon which the wounded man, made a charge with a lance, and had nearly transfixed the boy, when Wacora shot him; he afterwards killed the partizan, and bore off their scalps. Finding now the trail of the party, which he readily ascertained by their tracks, to consist of nine persons, he determined to return immediately with his utmost speed, even at the risk of meeting with the party, in order to inform Mr. Lisa of their presence in his vicinity; this he accomplished at the imminent hazard of his life. Thus proving that the most unlimited confidence, might be safely reposed in his faithful performance of his trusts.

Warriors often venture singly into the vicinity of an enemy's village, and even into the village itself, to capture horses or kill one of the nation. The Borgne, or One Eye, Ka-ko-a-kis, late grand chief of the Minnetarees, entered the village of an enemy at night, with his robe covering his head for concealment. He passed into several lodges, until at length he found one tenanted, at the moment, only by a young squaw; he drew his knife, compelled her to submit to his desires, then stabbed her to the heart, and bore off her scalp. He was a chief possessed of much power, but was almost universally disliked as a very bad man, and was at length killed by the Red-shield chief, E-tam-ina-geh-iss-sha.

The warriors often meet together and narrate, emulously their war exploits; two of them were one day thus engaged, one of whom, Wa-ke-da, or the Shooter, had killed more enemies than any other individual of his nation, although he had never *struck* more than two or three bodies of the slain. They continued for some time to boast of their feats, when the father of Wakeda, an old man of seventy years, in order to terminate the altercation, leaped from his seat and after *striking* upon several nations, concluded by the following witticism, "I approached the Pawnee-mahaws alone, for the purpose of stealing horses. I entered their village in the evening, succeeded in getting into one of their stalls, and was proceeding to take out the horses, when I was surrounded and made prisoner. They flogged me, thrust a stick into my anus, and sent me off, with the stick depending like a tail." This, as was intended, terminated the boasting, and the parties joined in general good humour.

Their notions of the attributes of bravery, differ in many respects from those which we entertain of them. It is in their estimation no proof either of valour or good sense, for a warrior to advance into the plain, stand still, and suffer his enemy to take deliberate aim, in order to shoot him down, when such a course of conduct can be avoided; but they say that when a warrior goes to battle, it is a duty, which is due to himself, to his nation, and to his friends, to avail himself of every possible advantage over his enemy, and even to kill him, if he can, without any risk of his own person. But a warrior must never yield in battle; he must contend until death, if he cannot escape from his enemy. And if entirely surrounded, he rushes amongst them, and endeavours to destroy or injure as many as possible, and in death he exhibits traits of passive courage, which form no part of the character of civilized men.

The succeeding narrative may serve, better than any general remarks, to convey an idea of the formalities attendant on a negociation for peace, amongst the Missouri Indians.

During the stay of our detached party at the Konza village, several chief men of the nation requested Mr. Dougherty, to lead a pacific deputation from their nation, to their enemies the Otoes, Missouries, and Ioways, then dwelling in one village on the Platte. Circumstances then prevented the gratification of their wishes, but he gave them to understand, that if the deputation would meet our party near Council Bluff, he would probably then be authorised to bear them company; on which they determined to send a party thither. Accordingly, on the day preceding the arrival of our steam boat at the position chosen for our winter cantonment, a deputation from the Konzas arrived for that purpose. It consisted of six men, led by He-roch-che, or the Real War Eagle, one of the principal warriors of the Konza nation.

Mr. Dougherty having made their pacific mission known to Major O'Fallon, the latter expressed to them his cordial approbation of their intentions, and the following day he despatched Mr. Dougherty with them, to protect them by his presence, on their approach to the enemy, and to assist them by his mediation, in their negociations, should it be found necessary.

They had not proceeded far on the way, when one of the

Indians inquired if the Sioux war parties were often in the neighbourhood. Mr. Dougherty informed them that they were; that they had killed an Oto sometime since, and more recently, four Omawhaw squaws. This intelligence induced Herochshe to request the loan of Mr. Dougherty's gun, they all looked sharply about them, and requested their guide to take the lead.

The distance to the Oto village is about twenty-five miles; on the journey over the prairies, they espied an object at a distance, which was mistaken for a man, standing upon an eminence. The Indians immediately halted, when Herochshe addressed them, with the assurance that they must put their trust in the Master of life, and in their leader; and observed that, having journeyed thus far on their business, they must not return until their purpose was accomplished; that if it was their lot to die, no event could save them; "we have set out, my braves,"[*] said he, "to eat of the Otoes' victuals, and we must do so or die;" the party then proceeded onward. The Indians are always very cautious when approaching an enemy's village, on any occasion, and this party well knew that their enterprize was full of danger.

In a short time they were again brought to a halt, by the appearance of a considerable number of men and horses, that were advancing towards them. After some consultation and reconnoitering, they sat down upon the ground, and lighting the peace pipe or calumet, Herochshe directed the stem of it towards the objects of their suspicion, saying, "smoke friend or foe;" he then directed it towards the Oto village, towards the white people, towards heaven, and the earth, successively.

The strangers, however, proved to be drovers, with cattle for the troops, on their way to Council Bluff.

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[*] When on a war excursion, or a pacific mission, the Indians always address their companions in this manner, "My companion," my brave. My brother, my brave."

In consequence of being thus detained, it was late in the afternoon when the party arrived at the Platte river, and as they had still eight miles to travel, and it was indispensable to their safety that they should reach the village before dark, Mr. Dougherty urged his horse rapidly forwards. The Indians, who were all on foot, ran the whole distance, halting but twice, in order to cross the Elk Horn and Platte rivers, although one of them was upwards of sixty years of age, and three of the others were much advanced in years.

As they drew near the Oto village, they were discovered by some boys who were collecting their horses together for the night, and who, in a telegraphic manner, communicated intelligence of their approach, to the people of the village, by throwing their robes into the air.

The party was soon surrounded by the inhabitants, who rushed towards them, riding and running with the greatest impetuosity. The greatest confusion reigned for some time, the Otoes shouting, hallooing, and screaming, whilst their Konza visitors lamented aloud. Shaumonekusse soon arrived, and restored a degree of order, when, the business of the mission being made known in a few words, the Konzas were taken up, behind some of the horsemen, and conveyed as rapidly as possible to the lodge of Shongotongo, lest personal violence should be offered them on the way. They did not, however, escape the audible maledictions of the squaws as they passed, but were stigmatized as wrinkled faced old men, with hairy chins, &c., ugly faces, and flat noses.

After running this species of gauntlet, they were quietly seated in the lodge, where they were sure of protection. A squaw, however, whose husband had been recently killed by the Konzas, rushed into the lodge, with the intention of seeking vengeance by killing one of the ambassadors on the spot. She stood suddenly before Herochshe, and seemed a very demon of fury. She caught his eye, and at the instant, with all her strength, she aimed a blow at his breast with a large knife, which was firmly grasped in her right hand, and which she seemed confident of sheathing in his heart. At that truly hopeless moment, the countenance of the warrior remained unchanged, and even exhibited no emotion whatever; and when the knife approached its destination, with the swiftness of lightning, his eye stood firm, nor were its lids seen to quiver; so far from recoiling, or raising his arm to avert the blow, that he even rather protruded his breast to meet that death, which seemed inevitable, and which was only averted by the sudden interposition of the arm of one of her nation, that received the weapon to its very bone.

Thus foiled in her attempt, the squaw was gently led out of the lodge, and no one offered her violence, or even harsh reproof. No further notice was taken of this transaction by either party.

Food was then, as usual, placed before the strangers, and soon after a warrior entered with a pipe, which he held whilst Herochshe smoked, saying in a loud voice, "you tell us that you wish for peace, I say, I will give you a horse, let us see which will be the liar, you or I." The horse was presented to him.

The evening, and much of the night was passed in friendly conversation respecting the events of the five years' war which they had waged with each other.

On the following morning the Konzas were called to partake of the hospitality of different lodges, whilst the principal men of the village were assembled in council, to deliberate upon the subject of concluding a peace.

At noon the joint and grand council was held in the Crenier's lodge. The Otoes, Missouries, and Ioways took their seats around the apartment, with the Konzas in the centre. Herochshe, whose business it was first to speak, holding the bowl of the calumet in his hand, remained immoveable for the space of three-fourths of an hour, when he arose, pointed the stem of the calumet towards each of the three nations successively, then towards heaven, and the earth, after which he stretched out his arm, with the palm of the hand towards the members of the council, moving round with his body so as to present the palm towards each of the members in succession. He then proceeded to shake each individual by the hand, after which he returned to his place, and renewed the motion of the hand as before.

Having performed all these introductory formalities, he stood firm and erect, though perfectly easy and unconstrained, and with a bold expression of countenance, loud voice, and emphatical gesticulation, he thus addressed the council.

"Fathers, brothers, chiefs, warriors, and brave men. You are all great men. I am a poor obscure individual. It has, however, become my duty to inform you that the chiefs and warriors of my nation, sometime ago, held a council for the purpose of concerting measures, to terminate amicably, the cruel and unwelcome war, that has so long existed between us, and chose me, all insignificant as I am, to bring to you this pipe which I hold in my hand. I have visited your village, that we might all smoke from the same pipe, and eat from the same bowl, with the same spoon, in token of our future union in friendship.

"On approaching your village, my friends and relatives, I thought I had not long to live. I expected that you would kill me, and these poor men who have followed me. But I received encouragement from the reflection, that if it should be my fate to die to-day, I would not have to die to-morrow, and I relied firmly upon the Master of Life.

"Nor was this anticipation of death unwarranted by precedent. You may recollect that five winters ago, six warriors of my nation come to you, as I have now done, and that you killed them all, but one, who had the good fortune to escape. This circumstance was vivid in my memory when I yesterday viewed your village in the distance; said I, those warriors who preceded me in the attempt to accomplish this desirable object, although they were greater and more brave than I, yet were they killed by those whom they came to conciliate, and why shall not I share their fate; if so, my bones will bleach near theirs. If, on the contrary, I should escape death, I will visit the bones of my friends. The oldest of my followers here, was father-in-law to the chief of those slaughtered messengers; he is poor and infirm, and has followed me with difficulty; his relatives, also, are poor, and have been long lamenting the loss of the chief you killed. I hope you will have pity on him, and give him a pair of mockasins (meaning a horse) to return home with, for he cannot walk. Two or three others of my companions, are also in want of mockasins for their journey homeward.

"My friends! we wish for peace, and we are tired of war; there is a large tract of country, intervening between us, from which, as it is so constantly traversed by our respective hostile parties, we cannot either of us kill the game in security, to furnish our traders with peltries. I wish to see a large level road over that country, connecting our villages together, near which no one can conceal himself in order to kill passengers, and that our squaws may be enabled to visit from village to village in safety, and not be urged by fear, to cast off their packs, and betake themselves to the thickets, when they see any person on the route. Our nations have made peace frequently, but a peace has not hitherto been of long duration. I hope, however, that which we shall now establish will continue one day, two days, three days, four days, five days. My friends! what I have told you is true; I was not sent here to tell you lies. That is all I have to say."

Herochshe then lit his pipe, and presented the stem to the brother of the Crenier, Wa-sac-a-ru-ja, or He who eats raw, who had formerly been his intimate friend. The latter held the end of the stem in his hand, whilst he looked Herochshe full in the face, for a considerable space of time. At length he most emphatically asked, "Is all true that you have spoken." The other, striking himself repeatedly and forcibly upon the breast, answered with a loud voice, "Yes! It is all truth that I have spoken." Wasacaruja, without any further hesitation, accepted the proffered pipe, and smoked, whilst Herochshe courteously held the bowl of it in his hand; the latter warrior then held it in succession to each member of the council, who respectively took a whiff or two, after which the pipe itself was presented to Wasacaruja to retain.

It is impossible to convey an adequate idea of the energy, and propriety, with which this speech was delivered, or of the dignity, and self possession of the speaker. Before he commenced he hesitated and looked around upon his enemies, probably in order to trace in the lineaments of their countenances, the expression of their feelings towards him. He then began his address, by raising his voice at once to its full intonation, producing a truly powerful effect upon the ear, by a contrast with the deep and long continued silence which preceded it. He was at no loss for subject or for words, but proceeded right onwards to the close of his speech, like a full flowing, bold, and impetuous stream.

Wasacaruja, in consequence of having first accepted of the calumet, was now regarded as responsible for the sincerity of his friend Herochshe. He therefore arose and thus addressed the embassador. "My friend! I am glad to see you on such an occasion as the present, and to hear that your voice is for peace. But I can hardly believe that we can ever rest in a permanent peace. A few winters ago, when we were in friendship with each other, I visited your village, and you gave me all your people, saying, that all the Konzas were mine. But it was not long afterwards, as we hunted near your country, that you stole our horses and killed some of our people, and I cannot but believe that the same course will be again pursued. Nevertheless, I shall again repair to the same place, of which I have spoken, this autumn, for the purpose of hunting, and in the spring I will again visit your town. You observed that you were apprehensive of being killed as you approached our village, and you most probably would have been so, coming as you did, late in the evening, and without the usual formality of sending a messenger to apprize us of your approach, had you not been accompanied by the *Big knife*, with whom you are so well acquainted. But we have now smoked together, and I hope that the peace thus established, may long continue. You say that you are in want of mockasins, we will endeavour to give you one or two, for your journey home. That is all I have to say."

Herochshe then apologized for his unceremonious entrance into the village, by saying that he knew it to be customary, to send forward a runner on such an occasion, and he should have done so, but his friend the Big-knife, whom he had previously consulted with that view, told him, that he had full confidence in the magnanimity of the Otoes.

Thus the ceremony was concluded, and peace restored between the two nations.

Numerous are the anecdotes already related by various authors, which go to show, that the desire of revenge for an injury or insult, is remarkably permanent with the North American Indian. It would almost seem, that neither time nor circumstance can utterly eradicate it, and it is certain that it is not always extinguished with the life of the offended individual, but that it sometimes descends as an inheritance, to his posterity.

A Puncaw warrior was killed in a quarrel, over the carcase of a bison, by a noted desperado of his own nation. The deceased left two sons, the elder of whom, in the course of a few years, became of sufficient age to hunt, and had the good fortune, in his first essay, to kill a fine bison. Whilst he was occupied in taking off the skin from his prey, he espied the murderer of his father approaching, who took his stand near the young hunter, and regarded him with a stern aspect. "Look up," said the intruder; the young man proceeded with his occupation. "I say, look at me," reiterated the other, "do you know who I am? begone from this carcass, it is mine." The young hunter then raised his eyes to the countenance of him, whom he had long been taught to consider as his enemy, and fiercely retorted the dark malignant scowl which was concentrated there; then gathering his bow and arrows, he slowly retired a short distance, and turning, perceived that the warrior had already taken possession of his prize. "Yes," he exclaimed bending his bow, "I do know you well, you are the murderer of my father, and are the cause of my being an orphan." As he spoke, he discharged an arrow, which pierced the heart of his enemy, who fell dead; the victor, however, continued to feather his body with arrows, until his quiver was exhausted. He then returned to the village and related his story to the people, who rejoiced at the death of a common disturber of the peace, and no one was found who wished to revenge his death.

Vengeance is sometimes transferred from an immediate to a remote object. The Otoes being on one occasion encamped near Mr. Lisa's trading establishment, many of their number became intoxicated with whiskey, and troublesome to the traders. But in order that the latter might not receive personal injury, two warriors were appointed by the chiefs to stand guard at the door of the house, with orders to repel all drunken individuals. Having consumed all the whiskey that had been given them, they clamorously demanded more, but the trader persisted in refusing it to them. Incensed at this denial, the grand chief Shongatonga, who was himself slightly intoxicated, went into the house, and meeting one of the traders near the door, he gave him a slight push with his hand, unobserved by Hashea the Cut-nose, who was then on guard. The act, however, was perceived by an Indian who reclined against an outhouse, at a little distance, smoking his pipe. He advanced, apparently with perfect indifference, and taking up a keg, the only weapon which presented, he approached Shongatonga, and discharged it with all his strength, full upon the head of that chief, who was knocked down senseless by the violence of the blow.

The Little Soldier, a brother-in-law of Shongatonga, who was present at this assault, immediately seized his tomahawk, and making a threat, rushed out of the house, his silver armbands and other ornaments, with which he is usually profusely decorated, sounding as he passed; he halted for an instant at the door, in order to distinguish some object, on which to wreak his vengeance; espying amongst the crowd of Otoes, one from whom he had received an injury fifteen years before, which deprived him of the sight of one eye, he pursued him, and with a blow of his tomahawk brought him to the ground; this unfortunate individual, like his victor, had also lost an eye, and in this rencontre the remaining one was destroyed.

Hashea, the guard, observing that the Indians were becoming very disorderly, drew his knife, declaring that he would kill the first individual of them he could meet with, and pursuing the canaille, they fled in every direction. During this interval an inferior Indian entered the store, and pointing with his finger near to the face of Mr. Lisa, said in a threatening tone, "You are the cause of all this disturbance;" the latter immediately kicked him out of the house; on which the Indian in a rage, declared he would revenge himself for an injury so gross. Seeking some object to destroy, he encountered a sow and pigs, and appeased his rage by putting them all to death. The Little Soldier now returned and found that his relative had recovered. Order was at length restored by the mediation of Mr. Dougherty.

But instances are not rare, in which an Indian is unwilling to punish an injury inflicted on himself, even when retaliation is amply in his power. As the troops were ascending the river, as usual by the aid of the cordelle, several Oto Indians were sitting on the river bank at the establishment of the Missouri fur company, quietly smoking their pipes, and apparently much interested in the movements before them. One of them was accosted by a soldier who had left his cordelle for the purpose, with an offer to purchase the pipe he was then using; but the Indian would not part with it, saying, he had no other to bear him company in his hunting excursions. The soldier requested permission to examine it, but as soon as the Indian put the pipe into his hands, he twisted the bowl from the handle and ran off with it. The Indian in company with one of the traders, immediately pursued the thief to his boat, and demanded the pipe; but obtaining no satisfaction, he came to Engineer Cantonment, and stated the circumstance to Major O'Fallon, who assured him that his influence should not be wanting to procure the pipe again, and to have the offender punished by a very severe whipping. The Indian, however, with more mercy than justice, replied that he would extremely regret the infliction of any punishment whatever upon the soldier, and he desired it might not be done; all he wished for was the recovery of his property.

The Omawhaws consider themselves superior, in the scale of beings, to all other animals, and appear to regard them as having been formed for their benefit. They will sometimes say, when speaking of a bad person, "he is no better than a brute." It is true that a magician tells his auditors that "a grizzly bear whispered in my ear, and gave me this medicine;" but his meaning is that the Wahconda, in the shape of that animal, had communicated with him.

Neither do they seem to suppose that the inferior animals accompany them to the other world, though they expect to pursue their occupation of hunting there.

In their opinion, the Wahconda has been more profuse in his distribution of gifts to the white people, than to the redskins, particularly in imparting to us the knowledge of letters, whereby the result of experience is so readily transmitted from one person to another, so as to seem like the operation of some great mystic medicine.

But they claim a superiority in natural intelligence, and readily perceive that they are more active, have a greater capacity for undergoing with fortitude, the many evils to which they are subject in every situation, and season, such as exposure to great heat and cold, hunger, thirst, and pain. They appear to esteem themselves more brave, more generous and hospitable to strangers than the white people; and these beneficent virtues with them, like the mental operations of faith, hope, and charity of the Christians, mark the perfect man.

They regard the white people, as very deficient in one of these cardinal virtues. They have been told by Indians, who have visited our settlements, that on entering the lodge of a white man, they will be informed that he has eaten his dinner, he will not, at least, set any food before them, and if they remain in the house, nothing is offered them until night, and even then, probably, but a stinted portion. The meanness of such demeanour they despise.

If a white man, or any stranger, enters the habitation of an Indian, he is not asked if he has dined, or if he is hungry, but independently of the time of the day or night, the pot is put upon the fire, and if there is but a single pound of meat in the possession of the family, that pound is cooked and set before him, and even if he has but just arisen from a feast, he must taste of the food, or offence is given. History has recorded, with high commendation, the name of a dethroned Christian monarch, who shared his last loaf of bread with a suppliant stranger, and surely a similar act in the Indian, although it be influenced by education and custom, is entitled to respect and applause.

They look upon the traffick in the necessaries of life, such as meat and maize, amongst the individuals of a nation, as consumptible. Such commerce they consider as a very unfavourable trait in the character of the white man; they, however, avail themselves of it in their dealings with him, provided he wants a considerable supply of those necessaries.

The food which is set before a guest, is, in every respect, considered as exclusively his own; he may give it to whom he may think proper, either within or without the lodge; he may even take it with him to his own lodgings, but the including vessel, must, in either case, be returned.

Much more food is usually served up to a guest, than he can possibly eat, and when he has satisfied his hunger, if he return the remainder to the host, the latter thanks him for it, as if he had received a favour.

So exemplary is their hospitality, that every stranger, even an enemy, is protected in the habitation of an Omawhaw, as far as the power and influence of the owner extends; he is immediately invited to sit down, and no questions are put to him. The master of the house is evidently ill at ease, until the food is prepared for eating, he will request his squaws to expedite it, and will even stir the fire himself. When the guest has finished his meal, the pipe is handed to him to smoke, after which the conversation begins either vocally or by signs. As soon as it is known that a stranger is in the village, he is invited to various feasts, at each of which he must reciprocate the politeness of the host, by partaking of his fare; the stranger is not unfrequently followed from lodge to lodge by several persons, who wish to secure him as a guest in their turn.

In the kindest spirit of hospitality, they are always careful to treat their guests, in the manner which they suppose will be most agreeable to them. A trader was invited to a feast, and the food being prepared, a squaw who was about to serve it up, in order to clean a bowl to contain it, began to scoop it with her curved finger. Her husband observing this usual mode of depuration, reprimanded her, saying, "I have told you that the white people do not like to see bowls cleaned in that manner, give me the vessel, and I will show you how they clean them." He then drew out one corner of his breech-clout, and substituting it for a towel, wiped the bowl thoroughly, and returned it to the squaw. The trader, as in duty bound, tasted of the contents, but he would have preferred the agency of the finger of the squaw, to that of the old breech-clout of the husband.

An unknown stranger is led to the lodge of the principal chief, where the inhabitants collect to see him, and do not hesitate to gratify their curiosity, by looking steadfastly in his face. The stranger, if an Indian, appears perfectly at his ease, not seeming to notice the crowd that surrounds him, in order that he may not encounter their eyes. After he has eaten and smoked, he delivers his message, states his business, or tells the news. If he is seated in a small skin lodge, which contains but few persons, one of these will repeat his words aloud, that the crowd without may hear.

They are pleased with the society of the Canadian French, but they do not appear to respect them highly, because they permit too much familiarity, and are not forward in revenging an insult. The Spaniards, probably from the representations of the Pawnees, who war against them, are held in but little esteem. But it is readily perceivable, as well from their own deportment as from the representations of the French, that they respect the character of the Americans (citizens of the United states) above that of any other nation, because, they are pleased to say, we are the bravest of the white people. Previously to the late war between the United States and Great Britain, the British are said to have been deemed most valorous. But, say they, the Ioways have informed us, that, at the commencement of the war, the British promised to give the Indians who took part with them in the contest, all the territory that lies westward of a great river (the Ohio), over which they declared they would drive the Americans. Their subsequent inability to comply with this promise, together with an indistinct idea of some of the conflicts, both by land and water, on our Canadian frontier, lead them to suppose that the Americans conquered in that war, and that they are now the most powerful of the nations of the earth.

Like the ancients the Indians have no rhymes in their poetry. They imitate the sounds of the voice of various animals, and of some, with so much success, as to deceive even such persons as are familiar with the animals thus imitated. This mimicry extends to the voices of the bear, bison, deer, wolves, prairie dog, turkey, owl, &c., together with those of some smaller birds, the notes of which are simple. But in these imitations we know of no individual, whose art enabled him to execute so great a variety of notes, and with so much melody, as we have heard from civilized performers, who have publicly exhibited their talents in this way, in our cities.

An Indian at his temporary night encampment, hearing the unexpected cry of an owl, wolf, &c., is generally suspicious of its proceeding from a human enemy, who is thus endeavouring to lull him into fancied security; such sounds being often made by war parties, on their nocturnal approach to their victims, to induce a belief that the animals around them are undisturbed.

They also imitate the motions of different animals, playfully, sometimes grotesquely, in their dances.

CHAPTER XV.

Tribes and Bands—Fabulous Legends—Wit—Ninnegahe or mixed tobacco—Dances—Otoes—Migrations—Language.

The Omawhaw nation is divided into two principal sections or tribes, which are distinguished by the names Hon-ga-she-no and Ish-ta-sun-da; the latter means Gray Eyes.

The first mentioned tribe, is sub-divided into eight bands, viz:

1. *Wase-ish-ta.* This band is interdicted from eating the flesh of male deer or male elk, in consequence of having their great medicine, which is a large shell, enveloped in the prepared skin of those animals. The chief of this band is the Big Elk, Ongpatungah; and it is more powerful and numerous in individuals, than either of the others.

The shell, which is regarded as an object of great sanctity and superstitious reverence, by the whole nation, has been transmitted from the ancestry of this band, and its origin is unknown. A skin lodge or temple is appropriated for its preservation, in which a person constantly resides, charged with the care of it, and appointed its guard. It is placed upon a stand, and is never suffered to touch the earth. It is concealed from the sight by several envelops, which are composed of strands of the proper skins, plaited and joined together in the form of a mat. The whole constitutes a parcel of considerable size, from which various articles are suspended, such as tobacco and roots of certain plants.

No person dares to open all the coverings of this sacred deposit, in order to expose the shell to view. Tradition informs them, that curiosity induced three different persons to examine the mysterious shell, who were immediately punished for their profanation, by instant and total loss of sight. The last of these offenders, whose name is *Ish-ka-tappe*, is still living. It was ten years since, that he attempted to unveil the sacred shell, but like his predecessors he was visited by blindness, which still continues, and is attributed by the Indians, as well as by himself to his committing of the forbidden act.

This shell is taken with the band to all the national hunts, and is transported by means of a hoppas on the back of a man.

Previously to undertaking a national expedition against an enemy, the sacred shell is consulted as an oracle. For this purpose, the magi of the band seat themselves around the great medicine lodge, the lower part of which is then thrown up like curtains, and the exterior envelop is carefully removed from the mysterious parcel, that the shell may receive air. A portion of the tobacco, consecrated by being long suspended to the skin mats, or coverings of the shell, is now taken and distributed to the magi, who fill their pipes with it, to smoke to the great medicine. During this ceremony, an individual occasionally inclines his head forward, and listens attentively to catch some sound which he expects to issue from the shell. At length some one imagines that he hears a sound like that of a forced expiration of air from the lungs, or like the noise made by the report of a gun at a great distance. This is considered as a favourable omen, and the nation prepare for the projected expedition with a confidence of success. But on the contrary, should no sound be perceived, the issue of the expedition would be considered doubtful.

2. *Kah-ka sa-be.* This band will not eat red maize. They ascribe to their family the greatest antiquity, and declare that their first man emerged from the water, with an ear of red maize in his hand. The principal chief is Ishkatappe.

3. *Wo-ta-ba-eta-je*, or, those who do not touch bears. This band refrains from eating the flesh of bears.

4. *Ke-e-ta-je,* or those who do not touch turtles or tortoises.

5. *We-jinga-e-ta-je,* or those who do not touch any kind of bird, excepting the war eagle.

6. *Hun-gah.* This band does not eat white cranes, as the down of that bird is their medicine.

7. *Kon-za.* This band must not touch the green clay, or even verdigris, both of which are used as pigments by the other bands, for ornamenting their persons.

8. *Ta-pa-taj-je.* This band must not touch deers' heads, neither must they wear deer skin mockasins. Many of the individuals of this band are partially grey haired. This change of the hair which they consider as a deformity, is attributed to a violation of the above-mentioned laws prescribed by their medicine.

The second division or tribe *Ishtasunda,* is sub-divided into five bands.

1. *Ta-pa-eta-je.* This band does not touch bison heads.

2. *Mon-eka-goh-ha,* or the earth-makers. Of this band was the celebrated Black-bird. They are not forbidden the use of any aliment, and are said to have originated the present mode of mourning, by rubbing the body with whitish clay.

3. *Ta-sin-da,* or the bison tail. This band does not eat bison calves, in the first year of the age of that animal.

4. *Ing-gera-je-da,* or the Red dung. This name is said to have originated from the circumstance of this band having formerly quarrelled, and separated themselves from the nation; until, being nearly starved they were compelled to eat the fruit of the wild cherry tree, until their excrement became red.

5. *Wash-a-tung.* This band must not touch any of the reptilia class of animals.

Each of these animals, or parts of animals, which the bands respectively are forbidden to touch or eat, is regarded as the particular mysterious medicine of the band collectively, to which it relates.

This singular, and, to us, absurd law of interdiction, is generally rigidly observed, and a violation of it, they firmly believe, will be followed by some signal judgment, such as blindness, gray hairs, or general misfortune. Even should the forbidden food be eaten inadvertently, or but tasted through ignorance, sickness they believe would be the inevitable consequence, not only to the unfortunate individual himself, but involving his wife and children also.

The name of one of the bands of the Puncaw nation is *Wa-ja-ja*, corresponding to the name which the Osages acknowledge, which is *Wawsashe*.

We have before observed, that they take great pleasure in relating and hearing the narration of fabulous legends. The following specimen will serve to exemplify their taste in this way.

A bison bull, an ant, and a tortoise agreed to undertake a joint war excursion, against the village of a neighbouring nation. As the latter associate was a slow walker, it was mutually decided in council that he should set out on the journey immediately, to be followed in a short time by his more active companions. The tortoise accordingly departed alone, making his way through the grass, with as much rapidity as possible. After a proper interval had elapsed, the bull also set out, and lest he should lose his fellow traveller, he consented to take him on his back. On their way the two champions were obliged to cross a miry place, in the midst of which they overtook the tortoise, struggling onward with the utmost labour, and apparently almost exhausted. They did not fail, as they passed gaily by the sluggish reptile, to express their surprise at his unusually tardy movements, and at the circumstance of his being apparently almost subdued, by the first obstacle that presented itself. The tortoise however, not at all discouraged, requested them to continue their journey, and expressed his confident expectation of being able to extricate himself from the mire, without the aid which they did not seem forward in offering to him. The two companions arrived at the village of the enemy, and were so incautious in their approaches to it, as to be discovered by the inhabitants, who sallied out upon them, and succeeded in wounding them both. The tortoise at length reached the village, and was also discovered, but had the additional misfortune of being taken prisoner.

To punish him for his presumption, the enemy resolved to put him to death, in such a manner as would be most painful to him. They accordingly threatened him successively with a number of different forms of torture, such as baking in hot embers, boiling, &c., with each of which the captive artfully expressed his entire satisfaction. They finally proposed to drown him, and this mode of punishment being so earnestly protested against by the tortoise, they determined to carry it into immediate execution.

With this view, several of the enemy carried him out into a deep part of the river, and threw him in.

The tortoise, thus released, and, through the ignorance of the captors of the art of torturing, abandoned to an element in which he could act freely and with much power, dived down from their view, and rising again, dragged two or three of them under water successively, and scalped them. Then rising above the surface of the water, he exhibited the scalps triumphantly to the enemy, who stood in crowds upon the bank of the river unable to injure him. Content with his fortunate achievement, the tortoise now journeyed homeward, and on arriving at his lodge, he found there the bull and ant both in bed, groaning piteously with their wounds.

Upon the reality of such stories many of the auditors seem to rely with implicit faith, particularly as their occurrence is referred to the chronology of former times, by such a prefatory notice as "once upon a time." The narrator proceeds with a degree of gravity of feature suitable to the nature of the events of his story, and notes a variety of little circumstances in detail, which contribute much to give the whole an air of truth to his auditors, who listen with an undivided attention, uttering occasionally an interjection, as their feelings are excited.

That the inferior animals did, in ancient times, march to battle with simultaneous regularity, that they conversed intelligibly, and performed all the different actions of men, many of them appear to admit, with as much faith as many equally absurd doctrines are believed in Christendom. But these qualities are supposed to be no longer inherent, and if an animal should now speak with the voice of man, it is either the effect of the immediate inspiration of the Waheconda, or the apparent animal is no other than the Waheconda himself incarnate.

The Indians sometimes indulge in pleasantry in their conversation, and Shaumonekusse seemed to be eminently witty, a quality strongly indicated by his well marked features of countenance. Their wit, however, is generally obscene, particularly when in conversation with the squaws.

Washingguhsahba conversing familiarly with a Frenchman, who had long resided in the Omawhaw village, observed, that the white people being in the habit of reading books, with the desire of acquiring knowledge, probably knew the cause of the difference of colour which exists between themselves and the Indian; he therefore requested information from the Frenchman on this subject. The latter, assuming an air of great gravity, assured him that the cause was very well known, and was no other than that the Indian was formed of red horse-dung. The chief, with every appearance of candour, which, however, he did not feel, instantly placed his hand on the arm of his companion, and replied that this observation was a convincing proof of the great knowledge of the white people, and that they were perfectly familiar with the early operations of the Master of Life. He had no doubt, he said, that they were equally well informed as to the matter out of which they were themselves formed, but if he, a poor ignorant Indian, with no knowledge but his own, might venture to give his opinion, he would say, that they were formed of the excrement of the dog, baked white in the prairie.

They sometimes employ an indirect method of communicating information, and of explaining some particular acts of their own, which may have been erroneously construed by others.

Several Omawhaws, accompanied by a Frenchman, one day passed our cantonment, on their way to the trading house with a considerable quantity of *jerked* meat. On their return they visited us; when one of them, who amused himself by turning over the leaves of a book in search of pictures, being asked by a squaw, in a jocular manner, what the book said, replied, "It tells me, that when we were taking our meat to the trading house, we wished to present some of it to white people on the way, but that the Frenchman would not permit us to do so." This remark explained the reason of their having offered us no meat.

An Indian, observing that one of our men when cutting wood, uttered the interjection *hah!* at each blow with the axe, smiled and asked if it assisted him, or added force to the blow.

The Kinnecanick, or as the Omawhaws call it *Ninnegahe*, mixed or made tobacco, which they use for smoking in their pipes, is composed partly of tobacco and partly of the leaves of the Sumack (rhus glabrum); but many prefer to the latter ingredient, the inner bark of the red willow (Cornus sericea;) and when neither of the two latter can be obtained the inner bark of the arrow wood (viburnum) is substituted for them. These two ingredients are well dried over the fire, and comminuted together, by friction between the hands.

Their pipes are neatly made of the red indurated clay, which they procure from the red pipestone branch of the Sioux river. The mass is readily cut with a common knife.

They frequently eject the smoke through the nostrils, and often inhale it into the lungs, from which it is gradually ejected again as they converse, or in exspiration.

An Omawhaw, after an eructation of wind from the stomach, is often heard to say "*How-wo-ne-ta*," thank you animal; which they explain by saying, that some animal has presented itself to the hunter. The exclamation, however, has but an obscure meaning, and may be compared, as somewhat similar, to the "God bless you" of the French, after the convulsion of sneezing.

They indulge much in the pleasures of dancing, and their dances are of various denominations, of which the following may be particularized.

The calumet dance, *nih-ne-ba-wa-wong*, is a very favourite dance. It is usually performed by two individuals, in honour, and in the presence, of some one of their own, or of a neighbouring nation, with the expectation of receiving presents in return. A person who intends to perform this dance, sends a messenger, bearing a small skin containing tobacco to fill a pipe, to the individual whom he intends to honour. If the proposed compliment should not be acceptable, it is refused in the most courteous manner, with excuses based upon poverty, and with many thanks for the honour intended. If, on the contrary, the tobacco should be accepted and smoked, the act shows that the visit also will be acceptable, and a time is fixed for the performance of the ceremony. At the appointed time the dancers, with two selected companions, repair to the place of their destination, and are invited into the lodge of the person whom they addressed. After a short time, the calumet is placed upon a forked support, which is driven into the soil in the back part of the lodge. Notice is then given to the bearer of the calumet, r[illegible]ting the time when it will be convenient for the dance to take place.

The bearer of the calumet is now considered as the *father*, and addresses the individual whom he is about to honour, by the title of *son*, presenting him with some valuable articles, such as a gun, kettle, blankets, and clothing, and ornaments for his youngest child, who is destined to represent the father or the adopted son, at the ensuing ceremony.

At sun-set the calumet is taken from the forked stick, or support, enveloped like an infant in swaddling clothes, and placed, carefully in a bed, prepared for its reception; a lullaby is then sung, accompanied by the music of the rattle, for its quiet repose. On the following morning it is *awakened* by a song, with the same music, and again consigned to its forked support. The appointed day having arrived, a space of sufficient diameter is enclosed by a skreen of skins for the dance, and a post is fixed in the earth, near the entrance to the area. Around this area the principal men of the nation seat themselves; the adopted son leads in his youthful representative; and the two dancers, decorated with paint, and entirely destitute of clothing with the exception of the breech-cloth, commence the dance. They are each provided with a decorated calumet stem, and a rattle of dried skin, or a gourd, containing pebbles, with which to keep time to the music of the gong, and to the vocal chaunting of the musicians of the village. They dance in the ordinary manner of the Indians, and pass backwards and forwards between the entrance and back part of the area, endeavouring to exhibit as much agility as possible in their movements, throwing themselves into a great variety of attitudes imitative of the actions of the war eagle, preserving at the same time a constant waving motion with the calumet in the left hand, and agitating the gourd in the right, more or less vehemently, agreeably to the music.

Warriors and braves will now bring forward presents of horses, guns, &c. The bridle of the horse is attached to the post by the donor, who receives the thanks of an old crier, stationed there to perform that duty. The music now ceases whilst the donor *strikes the post*, and recounts his martial deeds, and boasts of the presents which he has made at different times on similar occasions. Sometimes during the ceremony a warrior will take the gong from the performer, and strike upon it as many times as he has achieved brave and generous actions; he then sets it down, and no one must dare to touch it, but such as can strike upon it more frequently than the first; if this is done the gong is returned to the performer.

The calumet dance sometimes continues two or three days, but each night the calumet is consigned to its repose in the bed, with the same ceremonies as those of the first night.

When all the presents have been made, which the dancers have reason to expect, they depart immediately with them, to their own nation or lodge.

Instead of striking the post, the donors, sometimes, strike lightly upon the persons of the dancers themselves.

The presents sometimes made at these dances, are very considerable. Ongpatunga, once danced the calumet to Tarrarecawaho, the grand Pawnee chief, and received from him between eighty and ninety horses. The Pawnees are indeed distinguished, both for their liberality and dexterity at this ceremony. They gave one hundred and forty horses last autumn, to the Otoes, who performed this dance at their village. A party of Pawnees once danced at the Omawhaw village, and gave so much satisfaction to many individuals of this nation, as to receive extraordinary presents from them. On this occasion, one person, in the warmth of his feelings, brought forth his child, and presented it to them, as the most precious gift in his power to bestow. The Pawnees accepted this gift, but on their departure, they returned the child to its parent, accompanied by the present of a fine horse, upon which it was mounted.

The dance of discovering the enemy. This dance is sometimes performed in honour of strangers; at other times chiefs are invited by the warriors, who wish to exhibit their generosity in presenting them with horses, and to detail their own warlike feats, in the ceremony of striking the post. The chiefs, on this occasion, seat themselves in a circle, on the outside of which the warriors are also seated in a ring or circle, concentric, with that of the chiefs.

These arrangements being completed, the music strikes up, and a warrior advances, who takes a war-club and *crow*, provided for the purpose, the latter of which he belts around his waist. He then dances with a slow shuffling motion, around the exterior circle, exhibiting at the same time, a pantomimic representation of his combats with the enemy.

By and by the music beats a quicker time, and calls for corresponding movements on the part of the dancer, until at length both cease simultaneously. The warrior then advances to the post which he strikes with his club, and proceeds to detail one of his deeds of war. This done, the music recals him to the dance, and after a short time again ceases, that he may continue his chivalric history.

This alternate dance and recitation continues until the tale of the warrior is told, when he resigns his crow and war-club to another, who continues the amusement in like manner. Most of the dancers, present horses to the chiefs, after the performing of their respective parts, and it is generally the case, that each chief invited, is rewarded with one of those animals in return for the honour of his attendance.

The bear dance, *Moo-chu-wat-che.* This is a *medicine* dance, not distinguished by any very remarkable traits. The dancers, however, imitate the motions of the bear; and songs, in which there are many words, are sung.

The beggar dance. This has been already described, in our account of the visit of the Otoes at our cantonment last autumn. This is probably the dance mentioned by Carver on page 158 of his work, the performance of which, on his landing near Lake Pepin, by a party of Chippeways, was the cause of much alarm to his party.

The bison dance, *Te-magub-watche*. The performers in this dance are painted black, and are naked from the waist upward, with the exception of the head-dress, which is composed of the skin of the head of a bison, the face of which is cut off and rejected, so adapted to the top of their head as to resemble a cap, the horns projecting forward in such a manner as to correspond with their appearance when on the head of the bison. Attached to this head-dress, is a strip of the skin from the back of the bison, which hangs down behind to the buttocks like a tail. In the evolutions of the dance, they imitate the actions of the bison.

Amongst the Minnetarees is a ceremony called the corn dance, which, however, has but little claim to the title of a dance. Notice being given of this ceremony, by the village criers, the squaws repair to the medicine lodge, in which the magi are seated, performing their incantations, carrying with them a portion of each kind of seed which they respectively intend to plant the ensuing season; as an ear of maize, some pumpkin, watermelon, or tobacco seed. These are attached to the end of small sticks, which are stuck in the ground so as to form a right line in front of the magi. The squaws then strip themselves entirely of their garments, and take their seats before the spectators. The magi then throw themselves into a violent agitation, singing, leaping about, pointing to the sky, the earth, the sun, and the north star successively. After these paroxysms have subsided, the squaws arise, and each one taking her respective sticks, holds them up, with extended arms.

One of the magi, being provided with a large bunch of a species of bitter herb, dips it in a vessel of water, and sprinkles copiously the seeds and persons of the squaws, with much grotesque gesticulation. This concludes the ceremony, when the seeds are supposed to be fertilized, and to be capable of communicating their fertility to any quantity of their kind.

The women then assume their clothing, and return home, being careful to deposit the fertilized seed with their stock, after which they may proceed to planting as soon as they please.

We were informed that on some particular occasion, a large inclosure was constructed in the village of the Minnetarees, which was covered with jerked meat, instead of skins. The distinguished warriors who were concerned in the ceremony about to take place, deputed some of their party to summons a certain number of the handsomest young married squaws of the village, who immediately repaired to the meat covered lodge, with the consent of their husbands. The squaws were then disrobed in the midst of a considerable number of the bravest of the Minnetaree warriors, and after the conclusion of some ceremonies a *brave* entered, leading by the halter a very fine horse. He selected a squaw, whose beauty struck his fancy, and advancing to her, he laid the cord of the halter in her hand. She accepted the present, and immediately admitted him to her favour. Other warriors appeared in succession, leading horses, all of which were very readily disposed of in the same manner. This ceremony occurred during the day, and in the presence of the whole assembly.

In the same nation a singular night dance is, it is said, sometimes held. During this amusement an opportunity is given to the squaws to select their favourites. A squaw, as she dances, will advance to a person with whom she is captivated, either for his personal attractions, or for his renown in arms, she taps him on the shoulder, and immediately runs out of the lodge, and betakes herself to the bushes, followed by the favourite. But if it should happen, that he has a particular preference for another, from whom he expects the same favour, or if he is restrained by a vow, or is already satiated with indulgence, he politely declines her offer, by placing his hand in her bosom. On which they return to the

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assembly and rejoin the dance. It is worthy of remark that in the language of the Omawhaws the word *watche* applies applies equally to the amusement of dancing, and to sexual intercourse; but to avoid being misunderstood in speaking of the former they sometimes add the word gahe, *to make*.

What length of time the Omawhaws have resided on the Missouri is unknown, but it seems highly probable that they were not there when Mr. Bourgmont performed his journey to the Padoucas, in the year 1724, as he makes no mention whatever of them. It would seem, indeed, that they had separated from the great migrating nation, that we shall further notice below, on or near the Mississippi, and that they had since passed slowly across the country, or perhaps up the St. Peters, until they finally struck the Missouri at the mouth of the Sioux river. This is rendered highly probable by the circumstance of Carver having met with them on the St. Peters in the year 1766, associated with the Shienne and others, all of whom he represents as bands of the Naudowessie nation.

The Oto nation of Indians is distinguished by the name of *Wah-toh-ta-na*. The permanent village of this nation is composed of large dirt lodges, similar to those of the Konzas and Omawhaws, and is situate on the left bank of the river Platte, or Nebraska, about forty miles above its confluence with the Missouri. Although this nation distinguish themselves by the name Wahtoktata, yet when questioned respecting the signification of the word, they say it ought to be pronounced Wah-toh-ta-ta, or Wa-do-tan, which means those who will copulate. This singular designation, which they have adopted, was applied to the nation in consequence of their chief, at the period of their separation from the Missouries on the Mississippi, having carried off a squaw from that nation. The nation is, however, only known to the white people by the name Oto, Otto, or Othouez.

It thus appears, that their name has been adopted subsequently to the migration and partition of the great nation, of which they were formerly but a band. This great nation, they say, originally resided somewhere to the northward of the great lakes, and on their emigration southwardly, after performing a considerable journey, a large band of them, called *Ho-ro-ge*, or Fish Eaters, from their fondness of fish, separated from the main body, and established their residence on the margin of a lake. This band is now known by the name of Winnebagoes.

During the journey of the great nation, another band separated from them on the Mississippi, and received the name of *Pa-ho-ja*, or Gray Snow, which they still retain; but are known to the white people by the name of Ioways, or Aiaouez. They have, however, been distinguished by the name of *Pierced-noses*, as this was erroneously believed to be the meaning of the word Pahoja; and it will be confessed that the distinction is somewhat nice, when we learn that the true word for pierced nose is *pa-o-ja*.

Another band seceded from the migrating nation, and established a village at the mouth of the Missouri river; from which circumstance they received the name of *Ne-o-ta-cha* or *Ne-o-ge-he*, signifying *those who build a town at the entrance of a river;* they have been known to us only by the name of Missouries.

The Otos also separated from the nation on the Mississippi, and pursuing their journey across the country from that river, struck the Missouri near the confluence of the Great Nemawhaw. Here the Otoes remained a considerable time for the purpose of hunting; and it seems probable, from the name of the creek, that they also reared maize and cultivated the soil after their rude manner, as the word Nemawhaw, in their language, signifies *water of cultivation; ne*, water, and *mahaw*, planting or cultivating. From this locality the Otoes proceeded up the river to the Platte, and after hunting for some time near its confluence, they moved still further up the

Missouri, and established a village on its bank, about fourteen miles below Council Bluff. In this position they remained several years, during which time a band of the Ioways took up their residence about one year, on the bank of the river nearly opposite to them, and within about thirty miles of the present site of the Omawhaw village. The Otoes subsequently removed to the river Platte, about twenty miles above their present village; but finding the latter situation to be a more eligible one, they permanently established themselves there, and have already occupied it nearly a half a century.

The Ioways, after having resided in a village on the lower part of the Missouri a considerable space of time, were rejoined by the band above mentioned, when they abandoned their position, and returned to the waters of the Mississippi and erected a village on the *Moyene*, where it still remains.

The Missouries in process of time abandoned their village near the mouth of the river Missouri, and gradually moving up the river, at length constructed a town on the left bank, near the entrance of Grand river. In this position they were found by the French, who built a fort on an island of the Missouri, in their immediate vicinity, about the beginning of the last century. The garrison of this fort was entirely destroyed, according to Du Pratz, soon after its commander, the enterprizing Bourgmont, left it.

The author whom we have just mentioned further informs us respecting this nation, that "the Spaniards, as well as our other neighbours, being continually jealous of our superiority over them, formed a design of establishing themselves among the Missouries, about forty leagues from the Illinois in order to limit our boundaries westward. They judged it necessary for the security of their colony, entirely to cut off the Missouries, and for that purpose they courted the friendship of the Osages, whose assistance they thought would be of service to them in the enterprise, and who were generally at enmity with the Missouries. A company of Spaniards, men, women, and soldiers, accordingly set out from Santa Fe, having a Dominican for their chaplain, and an engineer for their guide and commander. The caravan was furnished with horses, and all other kinds of beasts necessary; for it is one of their prudent maxims, to send off all those things together. By a fatal mistake the Spaniards arrived first among the Missouries, whom they mistook for the Osages, and imprudently discovering their hostile intentions, they were themselves surprised and cut off, by those whom they intended for destruction. The Missouries sometime afterwards dressed themselves with the ornaments of the chapel, and carried them in a kind of triumphant procession to the French commandant among the Illinois." A terrible but just revenge! The Missouries continued to dwell in the same locality, until, about twenty years since, they were conquered and dispersed, by a combination of the Sauks, Foxes, and some other Indians, when they united their destiny with other friendly nations. Five or six lodges joined the Osages; two or three took refuge with the Konzas; and the chief part of the remainder amalgamated with the Oto nation, with whom they still reside. Thus connected, their manners, habits and language, being very closely allied, the Otoes and Missouries may be considered as one nation. They are probably the bravest of the native inhabitants of the Missouri, and there are but few males who have arrived at the age of maturity, that have not fleshed their arms in battle. Indeed, many of them can *strike* upon individuals of almost all the neighbouring nations, not excepting the distant Indians of Mexico, and the Spaniards themselves.

In vain should we seek among the nations of the Missouri, for an individual whose daring deeds have been more numerous, than those of the *Little Soldier*, or for more brave and generous combatants than Shaumonekusse, Hashea, Nahojeningya, and Wasacaruja. It is not fear, but probably a generous forbearance that has restrained them from killing more than two white men, within the memory of the present generation. Of these one, a Frenchman, was killed by *A-kir-o-ke* during the Spanish government; and the other, a Spaniard, by Shaumonekusse, more recently, at the sources of the Arkansa, an act, which, although attended by an extraordinary display of bravery, yet it was declared by this young warrior, to be the only martial act of his life that he was ashamed of.

The hunting grounds of the Oto nation, extend from the Little Platte up to the Boyer creek, on the north side of the Missouri, and from Independence creek to about forty miles above the Platte, on the south side of that river. They hunt the bison, between the Platte and the sources of the Konza rivers.

A few years since, their numbers were very much diminished by the small pox.

The language of the Otoes, Missouries, and Ioways, although the same, is somewhat differently pronounced, by these respective nations or tribes. The dialect of the Ioways is more closely allied to that of the Oto, than to the Missouri dialect; the former differs chiefly in being pronounced more sharply, as in the word In-ta-ra, *friend*, which in the Oto is In-ta-ro. The Missouri dialect differs in being more nasal; the children, however, of this nation, being, from their residence among the Otoes, in constant habits of association with the Oto children, are gradually assuming the pronunciation of that nation.

Originally the same, and still very similar to the above dialects, are those of the Osages, Konzas, Omawhaws, and Puncaws, the individuals of each of which nations can make themselves reciprocally understood, after a very little practice. The two latter dialects are so very closely allied, as not to be distinguishable from each other, by persons who are not very critically acquainted with the language. The

Omawhaw and Puncaw pronunciation, is more guttural than that of the two former, of which, particularly the Osage, the pronunciation is more brief and vivid.

The free and independent spirit of the Indian is carried even into their language, and may be recognized there, by its absolute destitution of a single word, drawn from the language of a civilized people. Thus, notwithstanding their constant familiarity with certain traders, and with various articles of the manufacture of the white people, they universally and in every instance reject the names which they originally hear for such men and things, and apply others, which they readily invent.

CHAPTER XVI.

Boyer's Creek—Visit to the Pawnees—Human sacrifices—Anecdote of Petalesharoo—Appendix.

On the 12th Lieutenant Graham, Lieutenant Talcott of Camp Missouri, Mr. Seymour, and I, accompanied by a soldier, departed in our small row boat, for the purpose of ascending Boyer Creek, and ascertaining the point at which that stream discharges from the Bluffs. The rapidity of the Missouri current soon transported us to the mouth of the creek, and we encamped, after ascending it the distance of a few miles. From this point Messrs. Graham and Talcott crossed the bottom lands, to the base of the bluffs, and by trigonometrical observation, ascertained the altitude of the highest point to be three hundred and fifty feet above low water mark of the Missouri. The next day we continued our voyage, but about noon perceiving that some necessaries had inadvertently been omitted in our loading, we despatched the soldier to the cantonment to procure them.

The following morning we were awakened by the loud cries of the sandhill crane, performing evolutions in the air, high over their feeding grounds. This stately bird is known to authors by the name of grus canadensis. It is mentioned by the enterprizing and excellent traveller Bartram in his work, and is very distinct from the grus americanus, of authors, or hooping crane, although many persons have supposed it to be no other, than the young of that gigantic species. The sandhill crane, in the spring of the year, removes the surface of the soil by scratching with its feet, in search of the radical tubers of the pea vine, which seem to afford them a very palatable food. Near our present encampment, and in many other situations bordering on streams of water, where this plant vegetates in the greatest profusion, we have frequently had occasion to observe that the surface of the soil was removed in small and irregular patches, by the industry of this bird in seeking for its favourite food.

This crane is a social bird, sometimes assembling together in considerable flocks. They were now in great numbers, soaring aloft in the air, flying with an irregular kind of gyratory motion, each individual describing a large circle in the air independently of his associates, and uttering loud, dissonant, and repeated cries. They sometimes continue thus to wing their flight upwards, gradually receding from the earth, until they become mere specks upon the sight, and finally altogether disappear, leaving only the discordant music of their concert, to fall faintly upon the ear.

Mosquitoes have already made their appearance in small numbers.

April 14th. The messenger returned and the voyage was continued. The creek was found to be very tortuous, and the navigation much impeded by fallen trees, extending in various directions across the stream, obliging us to resort to the use of the axe in many places, to obtain a passage for our boat. In the evening we arrived at the bluffs. The water had now become so shallow as not to admit of our further passage with the boat, which was left under the care of our man, and having made the necessary observations for ascertaining the latitude, on the following day we took our blankets on our backs, and proceeded on foot, intending to travel one day's journey further along the stream. At the distance of about five miles, the high grounds closely bounded the creek, and the valley, which below is extensive and fertile, disappears. We saw numbers of the smaller species of rattle snake, which had, no doubt, but lately left their winter dwelling. The creek, as observed this afternoon, although still about thirty feet wide is, in some places, not more than six inches deep, whilst in other parts it is two or three feet. As we went forward, the timber gradually decreased in quantity, until finally it was interrupted into remote small assemblages of trees, under one of which we spread our blankets, after a sultry day's march, over a tolerably fertile country. Numbers of ant hills are dispersed over the soil, and in many places are abundant; we could not choose but admire the assiduous industry of the little inhabitants, who were now engaged in repairing the structures for the approaching season of activity. The autumnal conflagration, which had comprehended within its destructive range almost the whole surface of the country, had consumed a large portion of the fragments of wood, which, intermixed with earth, forms the exterior wall of their mounds; these the emmets were now unremittingly employed in replacing, with half burned sticks, which were sought for in every direction. Verdure was appearing in favourable situations, and the ash was in full bloom, which tree, associated with the elm and willow, comprehends the chief portion of the few trees that were here seen. In the night we were awakened by a heavy fall of rain, and our attention was directed to personal safety by tremendous thunder and lightning, directly in the zenith, and we abandoned our guns and blankets to take refuge in the open prairie. This situation was peculiarly uncomfortable; we had been languid and oppressed by the heat of the sun during the afternoon's walk, and we were now shivering under the effects of cold and moisture. In the intervals we rekindled our fire, and became alternately, partially dry, and wet, as the fall of rain intermitted and recurred.

At the dawn of day we retraced our path, and found the tent pleasantly situate in an embowered spot, where three rattle snakes had been killed by the soldier in pitching it. On the following day we descended the creek.

18th. The creek was rapidly subsiding, so that a bridge constructed by the Omawhaws, which we had passed almost unobserved, was now two feet above the surface of the water, and rendered it necessary to unload the boat in order to drag her over. This structure is very simple; a double series of stout forked pieces of wood are driven into the bottom of the creek, upon these, poles are laid transversely, crossed by numerous smaller pieces, which form a support for dried grass, covered by a proper quantity of earth. What necessity gave rise to the building of this bridge we know not, and we are inclined to believe that bridge building, is a rare effort in our aboriginal architecture.

On the 20th Major O'Fallon set out on a visit to the Pawnee villages, accompanied by Captain Riley, Adjutant Pentland, Lieutenants Talcott and Graham, Mr. Dougherty, and myself, together with a guard of twenty-seven men, and with seventeen pack and riding horses. In recording the events of this journey it would be superfluous to note the appearance of the country over which we passed, or to describe the magnitude and direction of the water courses that intersect the route, as this will be detailed in another part of the work; our attention in the few following pages, will be more particularly directed to our transactions and interviews with the natives. In the course of the two following days we met with several Oto and Omawhaw Indians, who were occupied with hunting and trapping. On the 23d we halted a short time with a party of the latter nation, headed by a man of much note, known to the traders by the name of the *Valeur*, the relics of whose former village, we had previously observed on Shell creek. Near this stream of water we examined a great excavation in the brow of a bluff, to which the name of *Pawnee Medicine* has been applied, in consequence of its being an object of superstitious reverence to the people of that nation. It is evidently an artificial work, and the product of much labour, being about two hundred feet long, one hundred and thirty feet wide, and thirty deep. The origin and object of this effort of savage labour is involved in mystery, and the Pawnees cannot, at this day, give any rational history of it; the only advantage which we can suppose people to have derived from such a work, is security from the attack of a powerful enemy. An entire nation may have here defied the efforts of some allied army of an extensive coalition. We are inclined to conjecture, that the nation that has left us this monument of a primitive military art, is no other than the Rickarees, who now reside on the banks of the Missouri, between the Sioux (Dacota) and Mandan nations, and who are, beyond a doubt, a branch of the Pawnee stock, and probably are more immediately descended from that branch of it, now known as Pawnee Loups. We are led to this conjecture, however, only from the fact, that ruins of their former village, apparently coeval with the excavation, exist within two miles of Beaver creek. In this vicinity several antelopes (Cervicapra americana, Ord) were seen by the party, but they were so shy and swift, that it was not possible to kill one of them.

On the succeeding day, a large body of Indians was observed in the distance moving towards us, which proved to be the principal portion of the Oto nation, who were now returning to their own village, from a trading visit to the Pawnees. We here met with numerous acquaintances, who saluted us cordially, although they appeared somewhat jealous of our visit to the Pawnees. The Little Soldier rode up, with great animation, and communicated to some of us, by means of signs, an intimation that a glorious battle had been fought by a party of Pawnee Loups, in which the greater part of them had been killed, and nearly all of the remainder wounded.

We resumed our journey, and at the distance of two or three miles observed numerous horses grazing over the plain, squaws occupied in pitching skin lodges, and men advancing to meet us; they were soon recognized, for Omawhaws, and informed us that they were engaged in hunting. We were soon joined by the Big-horse, Crenier, and other chiefs and warriors of the Oto and Omawhaw nations, who remained a considerable time, and received a small present of tobacco, at parting.

At Willow creek, several Pawnees were observed on the opposite side at a distance, who avoided us, and as we continued on during the afternoon, many of them appeared at different times and places, on the bluffs, which at a little distance bounded our rout to the right; but, like the first we had seen, they would not approach our party, but retired on our advancing towards them.

The evening encampment was pitched at a favourable position, on the bank of the Loup fork, where we found a boy guarding horses; he had a melancholy air, and his appearance interested us much; a number of squaws had fled at our approach, but he remained unmoved. He invited us to continue onward to the village, stating the probability of a fall of rain on the coming night. "Are you not afraid," we asked, "to remain here all day, at such a distance from your village." "No," said he, with the utmost indifference, "the Sioux have not been here this long time past, but I saw a great many men and horses to-day on the opposite side of the river, they may have been Sioux, I do'nt know." Being presented with a biscuit, he ate part of it, and put the remainder in his belt for his parents, that they might taste of the food of the white people.

In the evening [illegible], a Canadian interpreter residing with the Pawnees, arrived with a letter from Mr. Papin,*

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*I gladly avail myself of the opportunity of noticing the many attentions which we received from this gentleman. At this time particularly he rendered us essential services, in which he appeared to take much pleasure.

(a trader in the nation,) stating, that as some misunderstanding had occurred amongst the chiefs, Tarrarecawaho had declined meeting the party, to escort us into the village, as he had previously intended to do.

This conduct of the chief was altogether unexpected, inasmuch as he had invited the agent, at the autumnal council, to visit his village, and requested him to halt his party at some distance, and inform him of his proximity, that he might be received with due ceremony. Major O'Fallon, immediately perceiving the necessity of supporting the dignity of commission in the eyes of these Indians, in order the more effectually to command their respect, directed the messengers to return forthwith and tell that chief, that "he must consider well whom he is about to receive; if he will not meet me in a proper manner, I will pass through his village, without looking at him or his people, and visit the next village, and so on to the third; and if I shall not be properly treated at either, I will return to Camp Missouri to count the graves of the soldiers whom he has heard died there." No further communication was received respecting the intentions of the great chief, and early on the succeeding morning our journey was resumed.

After riding a considerable distance over a beautiful plain, we came in view of the village of the Grand Pawnees, and saw in every direction great numbers of horses and mules, and a few asses, attended by men and boys. At some distance on the left the Loup fork meandered, on the bank of which stream, was a long line of squaws bearing heavy burdens of fuel towards the village. A chief was soon observed advancing with rapidity; he was received by our cavalcade with music playing, and flags displayed, and was recognized to be Sharitarish, eldest son of the chief of that name commemorated by Lieutenant Pike, and now second chief of the Grand Pawnees; the interpreters being absent, no particular communication was interchanged, and we moved on. A short time, however, only elapsed before Tarrarecawaho approached in full dress. We could not choose but admire the lofty dignity of his appearance; but his extreme hauteur became manifest when he halted at the head of our line, by not offering his hand, or even deigning to look at us. This deportment was reciprocated, and we moved onward again without particularly noticing him, excepting by the short intermission of movements which had taken place. We were soon informed from the rear, that the Grand Chief was making signs to induce us to halt; but finding that his imperious deportment gained no respect, and that his proffered request was altogether disregarded, he at once relinquished the high grounds which he had seemed anxious to maintain, and riding forward, he condescended to offer his hand to each of us in succession. The interpreters having rejoined the party, Major O'Fallon was enabled to communicate with the chief and principal men, such as Taritiwishta, chief of the Tappage band, Ishcatappa, brother of Sharetariah, and others who successively arrived. He then addressed Tarrarecawaho briefly thus; "Long hair, I have come to visit you agreeably to your invitation, and desire to know whether or not you are glad to see me." The chief answered. "That I am glad to see you, the display of these medals on my dress, and those flags of your nation which are waving in my village, will amply testify." He concluded by inviting us to his lodge, but we informed him that we had brought our own lodges and provisions, we would, however, accept of his hospitality by partaking of his food. We then performed a half circuit around the village, and entered it with the sound of the bugle, drum, and fife, with which the commonalty and children seemed highly delighted, following, or rather walking beside the musicians obliquely in two extensive wings, exhibiting the form of the letter V. Of these instruments the bugle was most decidedly the favourite. We passed by and saluted the mansions of the chiefs, at each of which an American flag was hoisted, with the exception only of one that was passed unnoticed, owing to its being distinguished by a Spanish flag; which, however, was struck as soon as the cause of the procedure was understood. This ceremony being performed the men were marched off to encamp, and we entered the dwelling of the Grand Chief. After partaking of some excellent boiled bison meat, he requested to know if we would condescend to eat at the houses of the warriors, but the agent informed him that we could only accept of the hospitality of chiefs. We were then conducted to six other feasts, in immediate succession, after which we retired to the encampment that had been formed in a low prairie near the town.

During our stay in Tarrarecawaho's lodge, Major O'Fallon spoke at some length to that chief; he informed him that thus far he was pleased with the reception he had given us; that he had come to repeat in the village, the same words that had been uttered at Engineer Cantonment, &c. The manner, as well as the matter of the address, seemed to command undivided attention; every eye was rivetted upon the speaker, and the most profound silence reigned throughout a crowded audience, that preserved a respectful distance behind the chiefs that were seated directly before us.

Instead of an immediate reply, Tarrarecawaho, who alone had remained standing, addressed his warriors in a loud, fluent, and impassioned manner: "I am the only individual of this nation, that possesses a knowledge of the manners and power of the whites. I have been to the town of the Red head, (Governor Clarke, at St. Louis,) and saw there all that a red skin could see. Here sits a chief, (pointing to the agent,) who controls every thing in this land; if he should prohibit you from wearing breech-cloths, you could not wear them. You know that we cannot dispense with powder and balls; you must also know that we cannot dispense with this chief, as he can prevent us from obtaining them. I have no personal fear; I only dread the consequence of improper conduct, to the women and children; take pity on your women and children, warriors. When he tells you that he is a chief, he speaks truly; when he says that his soldiers appear like the grass in the spring, in place of those who die, he speaks truly; you, my nation, are like the fly in strength, just so easily can his mighty nation crush you between their fingers. Young men, I have done; to-morrow I will invite the American chief to council, and if any of you wish to speak to him then, you have my consent. Do as I do; I am not ashamed of what I have done; follow my example."

He then, in a mild tone and polite manner, informed the agent that he would consult his chiefs, and would return an answer to his speech to-morrow.

Accordingly, about noon on the 20th, a messenger arrived with information that the chiefs and warriors were ready to receive the agent, and we repaired to the lodge in which the assembly was convened. They formed a circle round the chamber, sitting on grass mats; the chiefs occupied the back part of the lodge, directly in front of whom we were invited to be seated, on mats spread for our reception. A profound silence ensued, during which the eyes of the assembly were occasionally turned by a glance upon Tarrarecawaho, who at length arose, and after a short harangue, held his pipe to the Major to smoke, signifying that he presented a horse. Several speakers succeeded, who generally presented the pipe in the same manner. After an address from Major O'Fallon, who concluded by inviting the principal men to our camp, to present them with "a pipe of tobacco," the council dissolved.

On the expiration of two or three hours, the chiefs and warriors appeared at our camp, and seated themselves on robes and blankets, before our tent, whilst several hundreds of the people encompassed us, keeping however at a respectful distance. When the agent had terminated some appropriate observations, he deposited before Tarrarecawaho, Sharetarish, and the Tappage chief, the presents he intended to make, in as many separate parcels. A difference having for some time existed between the two first mentioned chiefs, the former, who was in fault, having threatened to chastise the other, and on being challenged by him, refused to decide the controversy by single combat, now availed himself of a favourable opportunity to obtain a reconciliation, by presenting to Sharetarish his entire parcel of merchandize. Sharetarish then proceeded to parcel out his double portion, consisting of fusils, powder and ball, strouding, blankets, calico, &c. amongst the multitude, reserving nothing for himself. He laid a portion at the feet of Tarrarecawaho, and this chief again performed the part of a donor, retaining only a United States' flag, and expressed his satisfaction and thanks to the agent, for the merchandize they had received. Sharetarish said, that if agreeable to his father, (Major O'Fallon,) he would return in a reasonable time, and bring some of his young warriors, for the purpose of performing a dance.

Towards evening, Sharetarish arrived with his dancers, thirty or forty in number, who were all accoutred and painted for the occasion. This exhibition, which would have appeared to us to partake much of the terrific, did we not feel assured of their pacific disposition, bore considerable resemblance to that performed by the Otoes at Engineer Cantonment, already described, excepting that less pantomimic action was used, and *striking the post* formed no part of the ceremony. At the termination of the dance, Sharetarish presented Major O'Fallon with a painted bison robe, representing several of his own combats with the enemy, as well as those of his friends, all of which he explained to us.

27th. The tents were struck, and we departed for the village of the Pawnee Loups. At the distance of four miles, we passed the Republican village about a mile on our left; from thence the distance is about three miles to the Loup village, over a beautiful bottom plain of the width of a mile and a half, extending along the Loup fork of the Platte. This plain is nearly thirty feet lower than that over which we had travelled, and which terminates abruptly at the Grand Pawnee village. When within two miles of the village of the Loups, a messenger requested the party to halt, in order to give the chiefs the requisite time to make their preparations to receive us in a manner suitable to the representative of a nation "so great and powerful as that of the Big-knives."

After waiting a short time, we observed, at the distance of a mile before us, a great number of mounted Indians emerging suddenly, apparently from the plain itself, for we could not then see a ravine that had previously concealed them from our view. They immediately began to ride in various directions, and to perform numerous evolutions until the whole were arranged in a widely extended line. These rapid movements, which attracted our attention from other objects, having ceased, we perceived a small body of men in front, whose movements were independent of the others, and who were advancing at a moderate pace. When all were formed, they set forwards, slowly at first, but gradually increasing their speed as they approached, until they surrounded us at a full charge. It is impossible by description to do justice to the scene of savage magnificence that was now displayed. Between three and four hundred mounted Indians, dressed in their richest habiliments of war, were rushing around us in every direction, with streaming feathers, war-weapons, and with loud shouts and yells. The few whom we had observed in advance of the main body, and whom, as they came near, we recognized to be the chief men, presented a perfect contrast to the others in their slow movements, and simplicity of dress. Courtesy obliged us to shake hands with each individual, as they came to us in succession for that purpose, nor was a single soldier of our train forgotten on this occasion by any one of them. They expressed great satisfaction on account of our visit, rubbing their breasts in token of the sincerity of this pleasure. Many remarked that the nation had been mourning for their grievous losses in a recent battle with an enemy, but that now grief should give place to rejoicing. Major O'Fallon addressed the Indians as usual, after which we again moved on towards the village. Latelesha, the grand chief, perceiving that the division of his warriors that were on our left, raised some dust on the march, ordered them all to leeward, that we might not be incommoded. Almost from the beginning of this interesting pageant our attention had been attracted to a young man who seemed to be the leader or partizan of the warriors. He was about twenty-three years of age, of the finest form, tall, muscular, exceedingly graceful, and of a most prepossessing countenance. His head dress of war eagles' feathers, descended in a double series upon his back like wings, to his saddle croup; his shield was highly decorated, and his long lance was ornamented by a plaited casing of red and blue cloth. On inquiring of the interpreter, our admiration was augmented by learning that he was no other than Petalesharoo, with whose name and character we were already familiar. He is the most intrepid warrior of the nation, eldest son of Latelesha, destined as well by mental and physical qualifications, as by his distinguished birth, to be the future leader of this people. Seeing that his father had taken a place in our cavalcade on the left of Major O'Fallon, he rode up on his right to the exclusion of a brave officer who had previously occupied that situation, and who now regarded him with an apparently stern aspect, but in which there was perhaps more of admiration than of irritation at this unexpected intrusion. The young chief caught the look, and retorted with an eye that seemed never to have been averted through fear. The name of Petalesharoo is connected with the abolition of a custom formerly prevalent in this nation, at which humanity shudders.

The *Pawnee Loups* heretofore exhibited the singular anomaly, amongst the American natives, of a people addicted to the inhuman, superstitious rite, of making propitiatory offerings of human victims to Venus, the *Great Star*. The origin of this sanguinary sacrifice is unknown; probably it existed previously to their intercourse with the white traders. This solemn ceremony was performed annually, and immediately preceded their horticultural operations, for the success of which it appears to have been instituted. A breach of this duty, the performance of which they believed to be required by the Great Star, it was supposed would be succeeded by the total failure of their crops of maize, beans, and pumpkins, and the consequent total privation of their vegetable food.

To obviate a national calamity so formidable, any person was at liberty to offer up a prisoner of either sex, that by his prowess in war he had become possessed of.

The devoted individual was clothed in the gayest and most costly attire; profusely supplied with the choicest food, and constantly attended by the magi, who anticipated all his wants, cautiously concealed from him the real object of their sedulous attentions, and endeavoured to preserve his mind in a state of cheerfulness, with the view of promoting obesity, and thereby rendering the sacrifice more acceptable to their Ceres.

When the victim was thus sufficiently fattened for their purpose, a suitable day was appointed for the performance of the rite, that the whole nation might attend.

The victim was bound to a cross, in presence of the assembled multitude, when a solemn dance was performed, and after some other ceremonies, the warrior, whose prisoner he had been, cleaved his head with the tomahawk, and his speedy death was insured by numerous archers, who penetrated his body with their arrows.

A trader informed us that the squaws cut pieces of flesh from the deceased, with which they greased their hoes; but this was denied by another who had been present at one of these sacrifices. However this may be, the ceremony was believed to have called down a blessing upon their labours of the field, and they proceeded to planting without delay.

The present mild and humane chief of the nation, Latelesha, or Knife-chief, had long regarded this sacrifice as an unnecessary and cruel exhibition of power, exercised upon unfortunate and defenceless individuals, whom they were bound to protect, and he vainly endeavoured to abolish it by philanthropic admonitions.

An Ietan woman who was brought captive into the village, was doomed to the Great Star by the warrior, whose property she had become by the fate of war. She underwent the usual preparations, and, on the appointed day, was led to the cross, amidst a great concourse of people, as eager, perhaps, as their civilized fellow men, to witness the horrors of an execution. The victim was bound to the cross with thongs of skin, and the usual ceremonies being performed, her dread of a more terrible death was about to be terminated by the tomahawk and the arrow. At this critical juncture, Petalesharoo (son of the Knife-chief) stepped forward into the area, and in a hurried but firm manner declared that it was his father's wish to abolish this sacrifice; that for himself, he had presented himself before them, for the purpose of laying down his life upon the spot, or of releasing the victim. He then cut the cords which bound her to the cross, carried her swiftly through the crowd to a horse, which he presented to her, and having mounted another himself, he conveyed her beyond the reach of immediate pursuit; when, after having supplied her with food, and admonishing her to make the best of her way to her own nation, which was at the distance of at least four hundred miles, he was constrained to return to his village. The emancipated Ietan had, however, the good fortune, on her journey of the subsequent day, to meet with a war party of her own people, by whom she was conveyed to her family in safety.

This daring deed would, almost to a certainty, have terminated in an unsuccessful attempt, under the arm of any other warrior, and Petalesharoo was, no doubt, indebted for this successful and noble achievement to the distinguished renown, which his feats of chivalry had already gained for him, and which commanded the high respect of all his rival warriors.

Notwithstanding the signal success of this enterprise, another display of the firmness and determination of the young warrior was required to abolish this sacrifice, it is to be hoped, forever. The succeeding spring, a warrior, who had captured a fine Spanish boy, vowed to sacrifice him to the Great Star, and, accordingly, placed him under the care of the magi for that purpose.

The Knife-chief, learning the determination of the warrior, consulted with his son, respecting the best means of preventing a repetition of the horrible ceremony. "I will rescue the boy," said Petalesharoo, "as a warrior should, by force;" but the Knife-chief, unwilling that his son should again expose himself to a danger so imminent, as that which he had once encountered in this cause, hoped to compel the warrior to exchange his victim for a large quantity of merchandize, which he would endeavour to obtain with that view. For this purpose he repaired to Mr. Pappan, who happened to be in the village for the purposes of trade, and communicated to him his intentions. Mr. Pappan generously contributed a considerable quantity of merchandize, and much was added by himself, by Petalesharoo, and other Indians.

All this treasure was laid in a heap together, in the lodge of the Knife-chief, who, thereupon, summoned the warrior before him. The chief armed himself with his war-club, and explained the object of his call, commanding the warrior to accept the merchandize and yield up the boy, or prepare for instant death. The warrior refused, and the chief waved his club in the air towards the warrior. "Strike," said Petalesharoo, who stood near to support his father, "I will meet the vengeance of his friends." But the more prudent, and politic chief, added a few more articles to the mass of merchandize, in order to give the warrior another opportunity of acquiescing without forfeiting his word.

This expedient succeeded; the goods were reluctantly accepted, and the boy was liberated, and was, subsequently, conducted to St. Louis by the traders. The merchandize was sacrificed in place of the boy; the cloth was cut in shreds and suspended by poles at the place of sacrifice, and many of the valuables were consumed by fire. It is not expected that another attempt will be made to immolate a human victim, during the life of Petalesharoo or of his benign father.

Our cavalcade performed a circuit round the village, and saluted at the lodge of Latelesha, upon which the flag of the United States was hoisted; the soldiers were then marched to a proper encamping place, and we were feasted as before. Great order prevailed in this village, and silence reigned throughout, which was attributed to their loss of friends and kinsmen.

On the following day the council was held, at which eleven horses and mules were presented in the usual manner. In two instances, however, the horse was represented by a cord or halter attached to a stick. One of these cords was drawn by a little Ietan girl, that Petalesharoo had captured in some battle and adopted as his daughter; she seemed to be the favourite of his family.

In the afternoon the greater part of the population were observed coming from the village towards our camp. As they drew near we ascertained that many were painted, armed, and decorated as if for war. Petalesharoo advanced and gave notice that he had brought some of his warriors for the purpose of honouring his American father with a dance. The dancers were about forty in number, and their movements and evolutions were similar to those of the Grand Pawnees. The deep-toned gong was so entirely concealed in the centre of the mass of dancers, that it was with difficulty we ascertained whence the wild and measured sound proceeded, which regulated their simultaneous movements. It was accompanied by other simple instruments, and occasionally interrupted from the ear by the piercing note of the whistle, or the sudden discharge of a gun, with the muzzle directed to the earth. At the termination of the first dance the partizan requested the accompaniment of our music for the succeeding dance. The music accordingly struck up, with the renewed beating of the gong, but it immediately threw them all into confusion, and after vainly endeavouring to regain their regularity, they ceased. Again the experiment was tried, and again it produced inextricable confusion. This repeated result brought a smile to the countenance of the partizan, who expressed his conviction, that his party was unable to dance to the music of the white people.

The principal men having now arrived agreeably to invitation, they were introduced into a large skin lodge which had been erected for us by the orders of Lateleaha, as our markee was too feeble to resist a strong wind which prevailed during the day. Presents were made to Lateleaha and the Metiff chief. The latter transferred his parcel to Lateleaha, who laid the whole before Petalesharoo to dispose of as he thought proper. The young chief appointed two persons to distribute them, and thus the whole was disposed of, though very unequally. The chiefs then returned their thanks and withdrew.

I passed the night at the lodge of the Metiff chief, and in the evening was amused by the exhibition of another dancing party, who concluded by inviting the chief to partake of a feast, to be given on the following day, for the purpose of dispelling his grief for the loss of his brother, in the late contest with the Indians of the Rocky Mountains.

This severe battle was fought by ninety-three Pawnee Loup warriors, against a large body of Ietans, Arrapahoes, and Kiawas.

The party was led by the most distinguished brave of the village, and half brother of the Metiff chief, but of unmixed blood, and a principal supporter of the influence of that chief. The party, who were all on foot, were on their way to capture horses, but they were badly armed for a contest, and had but twelve guns amongst them. They were proceeding cautiously along in the prairies between the head waters of the Arkansa and the Rio del Norte, when one party of their runners, or discoverers, came in with information that a great body of the enemy were ahead and had not seen them, another party of runners soon came in with the same information. The whole now halted to wait for night to capture horses, and busied themselves in preparing their ropes and halters, and in putting themselves in the best order in case of attack. One of the party ascended a small eminence, and perceived three of the enemy mounted and coming on in full career; presently more appeared, and soon after they began to show themselves in every quarter. It was now evident to the party that the enemy were the first discoverers, and that they were now necessitated to contend against a vastly superior force, better armed than themselves, and possessing also the advantage of being all mounted on good horses. It was obvious also that there was no hope for them, but in the display of desperate valour. Their first wish had been to gain a creek at some distance in the rear, which was margined with small timber, but as their enemy now completely surrounded them, this was impossible. The battle commenced about ten o'clock A. M. and soon raged with great fury.

Every muscle was called into action in our little band, who hung firmly together, discharging their arrows and occasionally a fusee at the enemy with the steadiest aim. The dead and wounded were falling in every direction in both parties. The enemy were so numerous that numbers of their braves, armed only with a shield, having rejected their offensive weapons, hovered in front of their companions, intent only upon the acquisition of the renown dearest to the heart of the warrior, that of first striking the body of a fallen enemy; many of them were however killed, even by their own people, as they rushed along, and intercepted the flight of the arrow or bullet from its destined mark. The combatants were at very close quarters, and the arrow had its full effect. They were for some time intermingled, and contended with their war-clubs and knives. The partizan who had been wounded severely early in the action, and had received several more wounds during its continuance, now was struck by an arrow, which buried itself to the feathers in his body. He knew the wound was a mortal one, and fell, but supported himself upon the ground to encourage his men, "my braves," said he, "fight whilst you can move a limb, and when your arrows are expended take to your knives." Looking around now upon his companions in arms he perceived that nearly all his principal braves were killed or disabled, and with his dying words he ordered those who were still on their feet to pierce the surrounding enemy, and endeavour to save themselves in the timber of the creek. As soon as it was ascertained that their partizan was dead, his orders were carried into effect, and the remnant of the party fought their way to the creek, where the enemy abandoned them, and returned to exult over the slain. One only of the principal braves was left in this shattered band; he declared he was ashamed that he had survived, and he immediately ran back to the enemy, although much wounded, and was seen no more. The party now found that they had left fifty-three men dead, or disabled, on the battle ground, amongst whom were all their braves, who had exposed themselves to danger more than the others. Of their numbers, now diminished to forty, all were wounded, with the exception of seven only, and some of these very desperately; one individual had eight different wounds. As they had thrown off their robes, breech-cloths and leggings, at the commencement of the battle, they were now absolutely naked, and the weather was extremely cold. They made rude cars on which they drew along those who could not walk, and thus they commenced and proceeded in their slow and laborious march to their village. During the journey some of the wounded requested to be killed, or left to die alone, and one who was wounded in the knee, after soliciting death from his brother repeatedly in vain, sought an opportunity to die, and finally plunged his knife in his heart. The party subsisted by killing a few bisons on the way, and partially clothed themselves with their raw hides; a miserable defence against the intensity of the cold.

The Grand Pawnees were more successful in war excursions during the winter. One of their parties encountered a party of Spaniards, who, my informant asserted, sought safety in flight. But it seems highly probable that a battle took place, and that many were killed, inasmuch as the victors returned with much clothing, merchandize, very handsome figured blankets, many horses, and some silver money. I was almost confirmed in this belief, by being subsequently informed that the party had certainly brought with them some scalps which were not those of Indians, and on passing through the village I thought that some of the hair which streamed in the wind from numerous portions of human scalps, suspended on sticks from the roofs of the lodges, was taken from the heads of Spaniards.

These three bands or clans of Pawnees, although they harmonise well together at present, are not exempt from the lot of artificial distinctions, and party animosity sometimes occurs, which, in one instance, had nearly produced fatal consequences. The Puncaw Indians, having conceived themselves injured by the Pawnee Loups, applied to the Grand Pawnees for aid in obtaining redress. The latter warmly espoused their cause, and the Grand Chief marched his warriors towards the Loup village, in avowed hostility. Petalesharoo hastily assembled his warriors for defence, and sallied out to meet the enemy; but finding their numerical force to be greatly superior to his own, he saw that the resistance which his little band could offer, though it might check their career, would, in all probability, be insufficient to repel them. He therefore rode forward between the parties and called aloud on Tarrarecawaho, who then advanced to meet him. The young chief immediately challenged him to a single combat; let us, said he, thus avoid the copious effusion of kindred blood, which otherwise must flow upon the earth in a general battle. This proposition was peremptorily refused. Then, said Petalesharoo, I must call you an old squaw, and a coward; return to your party and select for me the bravest of your men. This being also refused, Latelesha came forward and by amicable negociation, adjusted the point in dispute. This village contains about one hundred and forty-five lodges.

29th. The horses that were *smoked* yesterday were brought this morning, and we departed on our return by way of the Republican village. When within a mile of the latter we were again halted by a messenger, in order that the warriors might prepare to receive us properly. In about an hour they were seen issuing from the village, with four chiefs in front, who lamented aloud as they came near, in token of penitence for their offences. They proceeded to shake us by the hand, whilst about one hundred and fifty mounted, decorated, and painted warriors, were rushing about us in every direction, whooping, and yelling, and exhibiting such gracefulness and safety of riding as we had never before witnessed, excepting at the Loup village of which the present display was nearly a counterpart in miniature. In this sham attack, the partizan performed the part of our defender, hovering near us, and as the warriors charged upon us, he intercepted and repelled them. I expected to recognize amongst these warriors many of the individuals who had composed the war party that we encountered near the Konza village. I therefore scrutinizingly examined the countenance and figure of each one, as they successively offered their hands. But, although I had on that occasion particularly noted the features of several of the war party, for the purpose of identifying them on a future time, I could now recognize but a single individual. I knew him immediately, and judging from the Indian character, he knew me equally well, yet his physiognomy, on presenting me his hand, was not varied in the slightest degree from the expression with which he regarded my companions, many of whom he had not before seen.

After saluting at the village as before, we were invited into the lodge of *Fool Robe*, the principal chief, an old man of about eighty years, destitute of any thing remarkable in his appearance. The chief men being assembled, the council was immediately held. Major O'Fallon arose, and spoke at considerable length, informing them of the great power of the United States; he detailed the glaring offences of the Pawnee Republicans, and concluded by offering them peace or war, though neither of these was solicited in preference. The chief men, in reply manifested a great desire to adjust all differences, and promised to conduct themselves better in future. Fool Robe spoke well, but with evident embarrassment. They lamented their poverty, which prevented them from presenting more than four horses, sixteen bison robes, and a package of dried meat. A chief of this nation, called Petalesharoo, who promised, at Engineer Cantonment, to chastise the offenders, having neglected to execute this act of justice, retired from the village on our approach. The agent, on this account, declared to the council, that he wished never to see him again, that he did not consider him a brave man, as he was afraid to comply with his promise, and that if he ever should meet with him in council, he would compel him to sit with the young men. The council was further assured, that the offences, which the young men of this nation had committed against white people would be forgiven, but not forgotten. We had to regret the absence of the son of Fool Robe, a fine intelligent young man, who was engaged on some predatory excursion, at the head of one hundred and sixty warriors.

During the night a Konza war party carried off one hundred and forty horses from the village.

The following day we returned to the village of the Grand Pawnees, and received the horses that had been presented at the council by the ceremony of the pipe. A quantity of merchandize had been brought with us from Camp Missouri, to exchange for horses, for the service of the troops. This was put into the hands of Messrs. Pappan and Dougherty for that purpose, and we retired to our camp, which was upon the same spot as that we occupied on the night of the twenty-fourth instant.

May 1st. Mr. Pappan and Mr. Dougherty arrived from the village, having purchased nineteen horses and mules. The price of the horses and mules averaged about the amount of thirty dollars in Indian merchandize, estimated at the St. Louis valuation.

At each of the villages, we observed small sticks of the length of eighteen inches or two feet, painted red, stuck in the earth in various situations, but chiefly on the roofs of the houses, each bearing the fragment of a human scalp, the hair of which streamed in the wind. Before the entrance to some of the lodges were small frames, like painters' easels, supporting each a shield, and generally a large painted cylindrical case of skin, prepared like parchment, in which a war dress is deposited. The shield is circular, made of bison skin, and thick enough to ward off an arrow, but not to arrest the flight of a rifle ball at close quarters.

Defended by this shield, a warrior will not hesitate to cross the path of an arrow; he will sometimes dexterously seize the missile after it has struck, and discharge it back again at the enemy.

The lodges, or houses, of these three villages, are similar in structure, but differ in size. The description of those of the Konzas will apply to them, excepting that the beds are all concealed by a mat partition, which extends parallel to the walls of the lodge, and from the floor to the roof. Small apertures, or doors, at intervals in this partition, are left for the different families, that inhabit a lodge, to enter their respective bed-chambers.

In the evening Major O'Fallon presented each of us with a horse.

Several indians came to our camp, for the purpose of trading with the men. Major O'Fallon wished to obtain one of their horses, in exchange for one that he possessed; but the Indian modestly declined, saying, "My Father, the horse you offer was given by my brother, which is the same as if I had given him myself; I will exchange for almost any other horse."

Early on the following morning we departed on our return to the Missouri, with a numerous retinue of horses, amounting to more than sixty. On the way several bisons were killed, and three calves were taken alive in the chase, by throwing nooses over their heads.

On the 6th, we arrived at the Missouri, after an absence of sixteen days. Much of the information we acquired, respecting the manners, &c. of the Pawnees, is incorporated in the account of the Indians of the Missouri, in some of the preceding chapters of this work.

APPENDIX TO CHAPTER XVI.

Animals—Indian language of signs—Indian speeches.

I. *Animals.*

A catalogue of the names of animals, which we observed at Engineer Cantonment, or at other indicated places, on our journey to that post.

MAMMALIA.

Vespertilio novaboracensis, L—New-York bat.
——— *Carolinus, Geoff.*—Carolina bat.
Scalops aquaticus—Mole.
Ursus Americanus, (gularis, Geoff.)—Black bear.
Procyon lotor—Racoon.
Taxus labradoricus—Badger.
Mustela minx—Mink.
——— *vison.*
Mephitis putorius (chinche, Buff. Cuv.)—Skunk.
Lutra (mustela lutra Braziliensis Gm. Cuv.)—Otter.
Canis—Indian dog.
——— *lycaon*—Black wolf.
——— *virginianus*—Red fox.
——— *cinereo-argenteus*—Gray fox.
Felis concolor—Cougar.
——— *rufa*—Bay lynx.
Didelphis virginiana—Opossum.
Castor fiber—Beaver.
Ondatra Zibethicus—Muskrat.
Gerbillus Canadensis—Leaping-mouse.
Arctomys monax—Maryland marmot.
Mus agrarius?—Rustic mouse.
Arvicola Zanthognatha, Leach—Meadow mouse (on the Ohio).

Mus musculus—introduced by our expedition.
Pseudostoma bursaria—Pouched rat.
Sciurus cinereus—Gray squirrel.
——— *capistratus*—White-nosed do.
——— *striatus*—Ground do.
——— *niger*—Black do.
Lepus Americanus—Rabbit.
Cervus major—Elk.
——— *Virginianus*—Virginian deer.
Antilocapra Americana, Ord.—Prong-horned antelope.
Bos bison, Gmel.—Bison.

BIRDS.

Vultur (*Cathartes Illig.*) *aura*—Turkey-buzzard.
Falco (*Haliætus, Sav.*) *leucocephalus*—Bald eagle.
—— (*Pandion, Sav.*) *haliætus?*—Fish-hawk.
—— (*Accipiter, V.*) *ruficaudus, Vieil.* (*F. Borealis, L. Wilson.*)—American buzzard, Lath.
—— (*Circus, Bech.*) *uliginosus*—Marsh-hawk.
—— (*Buteo*) *galinivorus, Vieil*—Great hen, H.
—— (*Milvus, Bech.*) *furcatus*—Swallow-tailed falcon, Lath.
—— (*Tinnunculus, Vieil.*) *sparverius*—American sparrow-hawk.
—— (*Aquila, Briss.*) *fulvus*—Ring-tailed eagle, Wilson; war-eagle of the Omawhaws.
—— *lineatus Gm. Wils.*—Red-shouldered hawk.—Mississippi.
—— *Mississippiensis, Wilson*—Mississippi kite.
—— *velox, Wilson.*—Sharp-shinned hawk.
—— *Pennsylvanicus, Wilson.*—Slate-coloured hawk.
Strix (*Otus, Cuv.*) *otus*—Long-eared owl.
—— (*do* *do*) *Virgiano*—Virginian eared owl, Lath.
—— (*do* *do*) *asio*—Red eared owl, Lath.—Screech-owl.

Strix (*Ulula, Cuv.*) *nebulosa*—Barred owl, Lath.
—— (*Noctua, Savig.*) *phalænoides Daud. Vieil.*
—— (*do* *do*) *passerina, Wilson.*
—— (*do* *do*) *Hudsonia*—Hawk-owl, Wilson.
—— (*Bubo, Cuv.*) *bubo*—Great owl.
Lanius borealis. Vieil.—Great American shrike. Wils.
Tanagra Ludoviciana. Wils.—Louisiana tanager.
—— *rubra*—Scarlet tanager.
Musicapa (*Tyrannus. Cuv.*) *pipiri. Vieil.*—Tyrant fly-catcher. Wilson.
—— (*Tyrannus. Cuv.*) *Ludovicianus*—Louisiana fly-catcher. Lath.
—— *Canadensis Gm. Wilson.*—Canada fly-catcher
—— (*Icteria. Vieil. Pipra. Wilson.*) *viridis. L.* yellow-breasted Chat. Wils.
—— *cantatrix Bartram. Wils.*—White-eyed fly-catcher.
—— (*Mucipeta. Cuv.*) *ruticilla*—American red-start. Wilson.
—— *olivacea*—Red-eyed fly-catcher. Wilson.
—— *novaboracensis, Gm.*—Green black-capt fly-catcher. Wilson.
—— *fusca*—Pewee fly-catcher. Wilson.
Ampelis (*Bombycivora Temm.*) *Carolinensis. Briss.*—Cedar bird. Wilson.
Turdus rufus—Ferruginous thrush.
—— *felivox. Vieil.*—Catbird.
—— *fuscus.*—Brown thrush.
—— *pollyglottus*—Mocking bird.
—— *aurocapillus*—Golden-crowned thrush.
—— *migratorius*—Red-breasted thrush.
—— *aquaticus. Wils.*—Water thrush.
Sylvia solitaria. Wils.—Blue-winged yellow warbler.
—— *sialis*—Blue bird.
—— *striata. Wilson.*—Black poll warbler.

Sylvia Ludoviciana. *L.*—Blue yellow-backed warbler. Wilson.
——— (*Troglodites. Cuv.*) *troglodites? Wilson.*—Winter wren.
——— *azurea. Steph. cerulea. Wils.*—Cærulean warbler.
——— *æstiva. Lath.*
Certhia Caroliniana. Lath. Wils.—Great Carolina wren.
——— *palustris. Wils.*—Marsh wren.
Hirundo Americana—Barn swallow. Wilson.
——— *riparia*—Bank do.
——— *pelasgia*—Chimney do.
——— *purpurea*—Purple martin.
Caprimulgus Virginianus. L.—Whip-poor-Will.
——— *porpetue. Vieill.*—Night hawk.
Alauda alpestris L. Wils.—Shore lark.
——— *rubra*—Red lark.
Parus atricapillus—Black capped titmouse.
Emberiza Americana L. Wils.—Black throated bunting.
Fringilla (*Ploceus. Cuv.*) *erythrocephala*—Towhee bunting.
——— *socialis. Wilson.*—Chipping sparrow.
——— *oryzivora*—Rice bird.
——— *pecoris. Wils.* (*Emberiza*)—Cow bird.
——— (*Carduelis, Cuv.*) *tristis*—Yellow bird.
——— *melodia. Wilson.*—Song sparrow.
——— *purpurea*—Purple finch.
——— *Hudsonia*—Snow bird.
——— (*Linaria. Bech.*) *linaria*—Lesser red-poll.
Loxia (*Vidua. Cuv.*) *cardinalis*—Cardinal gross beak.
——— (*do* *do*) *Ludoviciana.*—Rose-breasted do.
——— (*Corythus. Cuv.*) *enucleator*—Pine gross beak.
——— *Curvirostra Americana. Wilson.*—American cross-beak.
Gracula (*Icterus. Cuv.*) *quiscala*—Purple grackle.

Oriolus (*Zanthornus. Cuv.*) *phœniceus*—Red-winged starling. Wilson.

——(*Zanthornus. Cuv.*) *Baltimoreus*—Baltimore bird.

——(*do* *do*) *spurius*—Orchard oriole.

——(*do* *do*) *icterocephalus*—Yellow headed oriole.

Sturnus Ludovicianus—Meadow lark. Wils. The S. torquatus of Stephens seems to be the male of this species.

Sitta Carolinensis—White-breasted nuthatch. Wilson.

—— *varia*—Red-bellied do —— do.

Corvus corax—Raven.

—— *corone*—Crow.

—— (*Pica. Cuv.*) *pica*—Magpie.

—— (*Garrulus. Cuv.*) *cristatus*—Blue jay.

Trochilus colubris—Ruby-throated humming bird.

Alcedo alcyon—Belted Kingfisher.

Picus pileatus—Pileated woodpecker. Lath.

—— *erythrocephalus*—Red-headed woodpecker.

—— *auratus*—Gold-winged do.

—— *pubescens*—Downy do.

—— *villosus*—Hairy do.

—— *Carolinus*—Red-bellied do.

Psittacus Carolinensis—Caroline parroquet.

Meleagris gallopavo—Turkey.

Tetrao cupido—Pinnated grouse.

—— *umbellus*—Ruffed do.

—— *phasianellus*—Long-tailed grouse.

—— (*Perdix*) *Virginianus*—Virginian partridge. Wilson.

Columba migratoria—Passenger pigeon. (*C. Canadensis* is the female. Temm.)

—— *Carolinensis*—Caroline pigeon or dove.

Charardrius vociferus—Kildeer.

—— *pluvialis*—Golden plover.

Ardea (*Grus. Cuv.*) *Americanus*—Hooping crane.

——(*do* *do*) *Canadensis*—Sandhill do.

Ardea herodias—Great heron.
——— *virescens*—Green heron.
——— *nycticorax*—Night heron.
Numenius longirostra—Long-billed curlew.
Scolopax minor—Little woodcock.
———— (*Totanus*) *semipalmata*—Willet.
———— (*do*) *melanoleucus*. *Vieil.*—Stone curlew.
———— (*do*) *vociferus*—Telltale godwit.
Tringa solitaria. *Wilson.*—Solitary sandpiper.
——— *Bartramia*. *Wilson.*—Bartram's sandpiper.
——— *semipalmata*. *Ord.*—Semipalmated sandpiper.
Scolopax flavipes *Gm.* *Wils.*—Yellow-shanks snipe.
———— *fedoa*. *L.* *Wilson.*—Great marbled godwit.
Recurvirostra Americana—American avocet.
Colymbus glacialis—Great northern diver.
———— (*Podiceps*. *Lath.*) *cornutus*—Horned grebe.
Fulica Americana—Common coot.
Larus ridibundus?—Laughing gull.
Sterna aranea. *Wilson.*—Marsh tern.
——— *minuta*—Lesser tern.
Pelecanus erythrorhynchos—Rough-billed pelican.
———— *fuscus*—Brown pelican.
———— (*Phalacrocorax*. *Briss.*) *carbo*—Corvorant.
Anas (*Cygnus*. *Meyer.*) *cygnus*—Swan.
—— (*do*) *Canadensis*—Canada goose.
—— (*Anser*. *Briss.*) *hyperborea*—Snow goose.
—— (*do*) *bernicla?*—Barnacle goose.
—— (*do*) *albifrons*—White-fronted goose.
—— *discors*—Blue-winged teal.
—— *albeola*—Buffle-headed duck.
—— *boschas*—Wild duck.
—— *sponsa*—Summer duck.
—— *marila*—Scaup duck.
—— *acuta*—Pin-tailed duck.
—— *glacialis*—Long-tailed duck.

Anas clangula—Golden-eye.

—— *Americana*—American widgeon.

Mergus serrator—Red-breasted mergamser.

——— *cucullatus*—Hooded do.

REPTILIA.

Testudo clausa.—This is our common land tortoise. It rarely, if ever, enters the water, voluntarily, and is therefore decidedly terrestrial.

Testudo (Emys. Brogni.) geographica. Lesueur.

——— *(do do) serpentaria*—Serpent tortoise.

——— *(Trionix. Geoff.) ferox*—Fierce tortoise.

Lacerta (Agama) undulata. Daud.

——— *(Scincus) 5-lineatus.*

Coluber constrictor—Racer.

——— *ordinatus*—Garter snake.

——— *heterodon*—Hog-nose snake.

Crotalus horridus. L.—Banded rattle snake.

——— *durissus. L.*—Diamond rattle snake.

Rana pipiens. Daud. (R. Catesbeana. Shaw.)—Bull-frog—Ohio.

Rana halecina Kalm. Daud. (R. pipiens Schreb. Shaw.) —Shad frog—Ohio.

Rana clamata. Daud.

—— *(Hyla) occularis. Daud.*—On the Ohio, near Shippingsport. This species is subject to vary considerably. In addition to the lateral vitta, it has sometimes three dorsal vittæ: other specimens have a remarkable cruciform mark on the back.

Rana (Hyla) femoralis. Daud.—Ohio.

—— *(Bufo) musicus*—Common toad.

Salamandra subviolacea. Barton.—near Shippingsport.

——— *longicauda. Green.*—near Pittsburgh.

——— *rubra. Daud.*—Ohio.

——— *cinerea. Green.*—near Shippingsport.

Salamandra (Triton Laur.) Alleganiensis (Salam. gigantea. Barton.—Pittsburgh.

The following observations were made, relative to the arrival and departure of birds, at Engineer Cantonment. A few notes are added, which were made at Pittsburgh and other places.

Vultur aura.—Arrived, April 2, 1820. On the Ohio, observed, May 9, 1819.

Falco haliaetus?—Flying north May 17, 1820.

—— *furcatus.*—Was seen 20,

The *Falco* and *Strix* families generally winter here.

Tanagra rubra.—Arrived May 1, 1820—at Pittsburgh arrived, April 29, 1819.

Muscicapa olivacea arrived April 30, 1820.

———— *cantatrix* — 30,

———— *ruticilla* — 28, 1820. On the Ohio, observed May 2, 1819.

Muscicapa fusca arrived March 22, 1820.

———— *pipiri* — May 7, 1820. On the Ohio observed May 8, 1819.

Turdus fuscus arrived April 22. At Pittsburgh the 14th.

Turdus aurocapillus — 26, 1820.

——— *aquaticus* — 26,

——— *migratorius* — 11,

——— *felivox* observed on the Ohio May 6, 1819.

——— *rufus* do do 2, 1820.

Certhia palustris arrived April 15, 1820.

Sylvia striata — 26,

—— *azurea* — 22,

—— *sialis*—a few remain all winter.

Hirundo pelasgia arrived May 1, 1820. At Pittsburgh, arrived April 27, 1819.

Hirundo purpurea arrived March 30, 1820. At Pittsburgh April 14, 1819.

Hirundo Americana—at Pittsburgh, arrived April 21, 1819.

Caprimulgus Virginianus arrived April 19, 1820. At Pittsburg, heard May 5, 1819.

Caprimulgus porpetue arrived May 16, 1820. On the Ohio observed May 6, 1819.

Caprimulgus rufus. Vieil.—heard on the Ohio June 2, 1819.

Parus atricapillus—all winter.

Fringilla erythrocephala arrived March 22, 1819.

——— *purpurea* seen Feb. 28,

——— *Hudsonica* departing April 11,

——— *oryzivora* arrived May 14,

——— *linaria* — Feb. 1,

——— *tristis* remains during the winter.

Loxia Ludoviciana observed May 1 and 6, 1819.

—— *Americana* — Feb. 21,

—— *cardinalis*—on the Ohio May 8,

—— *enucleator*—occasionally seen during the winter.

Oriolus icterocephalus observed May 14, 1820.

——— *phœniceus* — March 1,

——— *Baltimoreus* observed near Pittsburgh April 29, 1819.

Sturnus Ludovicianus arrived April 5, 1820.

Sitta Carolinensis remains all winter.

Corvus pica retired northward March 28, 1820.

——— *corax*—the young nearly able to fly, May 12, 1820.

Trochilus colubris arrived May 18, 1820. On the Ohio, May 6, 1819.

Alcedo alcyon arrived March 20, 1820.

Picus erythrocephalus arrived March 20, 1820.

——— *auratus* and some others remain all winter; but the *erythrocephalus* is entirely migratory.

Picus pileatus—seen Feb. 28, 1820.

Psittacus Carolinensis—seen several times during the winter: near Louisville, May 23, 1819.

Columba migratoria arrived May 2, 1820.

Columba Carolinensis arrived April 30, 1820.

Ardea Americanus — March 19,

—— *virescens* seen on the Ohio May 6, 1819.

—— *Canadensis* arrived May 24, 1820.

Numenius longirostra arrived April 1, 1820. Was seen on the top of the Allegany mountain March 24, 1819.

Curvirostra Americana—seen Feb. 20, 1820.

Scolopax vociferus arrived March 19, 1820. At Pittsburgh, observed May 6, 1819.

Scolopax semipalmata arrived May 6, 1820.

——— *minor* — April 8,

Tringa solitaria — 30, At Pittsburgh observed May 15, 1819.

Colymbus cornutus arrived May 5, 1820.

Larus ridibundus?—in large flocks, flying northward, May 4, 1820. They were seen at Pittsburgh April 3, 1819.

Sterna minuta arived April 2, 1820.

Pelecanus erythrorhynches arrived April 8, 1820.

——— *carbo* arrived April 10, 1820. At Pittsburgh arrived May 5, 1819.

Anas cygnus—flying to the north Feb. 22, 1820.

—— *canadensis* do do 21,

—— *acuta* shot 28,

—— *Americana* shot March 3,

—— *sponsa* with their young May 30, 1819.

The great migration of geese, swans, ducks, and cranes, commenced on the 22nd of February, and terminated the latter end of March, 1820.

II.—INDIAN LANGUAGE OF SIGNS.

[*Referred to in page*, 202.]

1. *Sun*—The fore finger and thumb are brought together at tip, so as to form a circle, and held up towards the sun's track. To indicate any particular time of the day, the hand with the sign of the sun, is stretched out towards the east

horizon, and then gradually elevated, to show the ascent of that luminary, until the hand arrives in the proper direction, to indicate the part of the heavens in which the sun will be at the given time.

2. *Night, or sleeping*—The head, with the eyes closed is laterally inclined for a moment upon the hand. As many times as this is repeated, so many nights are indicated; very frequently the sign of the sun is traced over the heavens, from east to west, to indicate the lapse of a day, and precedes the motion; it also precedes the following—

3. *Darkness*—The hands extended horizontally forwards, and back upward, pass one over the other, two or three times touching it.

4. *Combat*—The clenched hands are held about as high as the neck, and five or six inches asunder, then waved two or three times laterally, to show the advances and retreats of the combatants; after which the fingers of each hand are suffered to spring from the thumb towards each other, as in the act of sprinkling water, to represent the flight of missiles.

5. *Prisoner*—The fore finger and thumb of the left hand, are held in the form of a semicircle, opening towards, and near the breast, and the fore finger of the right representing the prisoner, is placed upright within the curve, and passed from one side to another, in order to show that it will not be permitted to pass out.

6. *Man*—A finger held vertically.

7. *Seeing*—The fore finger, in the attitude of pointing, is passed from the eye towards the real or imaginary object.

8. *Seen, or discovered*—The sign of a man, or other animal, is made, after which the finger is pointed towards, and approached to your own eye; it is the preceding sign reversed.

9. *Entering a house or lodge*—The left hand is held with the back upward, and the right hand also with the back up, is passed in a curvilinear direction, down under the other,

so as to rub against its palm, then up on the other side of it. The left hand here represents the low door of the skin lodge, and the right, the man stooping down to pass in.

10. *Theft*—The left fore arm is held horizontally, a little forward or across the body, and the right hand passing under it, with a quick motion, seems to grasp something, and is suddenly withdrawn.

11. *Hunting*—The fore finger is brought near the eye, and placed in the attitude of pointing, it is then wagged from side to side, the eye following its devious motion, and seeming to look in the direction indicated. Sometimes the hand is extended far before the eye, and the same motion is given to the finger.

12. *Pretty*—The fingers and thumb, so opposed as to form a curve, are passed over the face nearly touching it, from the forehead to the chin, then add the sign of *Good*, No. 42.

13. *Eating*—The fingers and thumb are brought together in opposition to each other, into something of a wedge shape, and passed to and from the mouth four or five times, within the distance of three or four inches of it; to imitate the action of food passing to the mouth.

14. *Drinking, or water*—The hand is partially clenched, so as to have something of a cup shape, and the opening between the thumb and finger is raised to the mouth, as in the act of drinking. If the idea of water only is to be conveyed, the hand does not stop at the mouth but is continued above it.

15. *Enough, or a belly full*—The sign for eating is first made, then the fore finger and thumb are opposed to each other, so as to form a semicircular curve, which is elevated along the body from the belly to the neck, in order to indicate that the interior is filled with food up to that part.

16. *Squaw*—The hands are passed from the top down each side of the head, indicating the parting of the hair on the top, and its flowing down each side.

17. *The discharging of a gun*—Is indicated by slapping the back of the right hand partially closed, into the palm of the left.

18. *Death*—By throwing the fore finger from the perpendicular, into a horizontal position towards the earth, with the back downwards.

19. *Killing*—The hands are held with the edge upwards, and the right hand strikes the other transversely, as in the act of chopping. This sign seems to be more particularly applicable to convey the idea of death, produced by a blow of the tomahawk or war-club.

20. *Bison*—The two fore fingers are placed near the ears, projecting, so as to represent the horns of the animal.

21. *Surrounding the Bison*—The sign No. 20, is first made, the hands with the fore fingers and thumbs in a semicircle, are then brought two or three times together.

22. *Discharging the arrow*—The hands are placed as in the attitude of drawing the arrow in the bow, (this is also the sign for the bow) and its departure is indicated by springing the fingers from the thumbs, as in the act of sprinkling water.

23. *To speak*—The motion is like sprinkling water from the mouth by springing the fore finger from the thumb, the hand following a short distance from the mouth at each resilience, to show the direction of the word, or to whom it is addressed; this motion is repeated three or four times.

24. *Haranguing*—The above motion repeated rapidly, the hand at each motion pursuing a different direction, to show that the talk is addressed to various persons.

25. *Quantity, or great number*—The hands and arms are passed in a curvilinear direction outwards and downwards, as if we were showing the form of a large globe; then the hands are closed and elevated, as if something was grasped in each hand, and held up about as high as the face.

26. *Exchange*—The two fore fingers are extended per-

pendicularly, and the hands are then passed by each other transversely in front of the breast, so as nearly to exchange positions.

27. *Inquiry*—The hand held up with the thumb near the face, and the palm directed towards the person of whom the inquiry is making, it is then rotated upon the wrist two or three times edgewise, to denote uncertainty.

28. *Truth*—The fore finger passed, in the attitude of pointing, from the mouth forward in a line curving a little upward, the other fingers being carefully closed.

29. *Lie*—The fore and middle fingers extended, passed two or three times from the mouth forward, they are joined at the mouth, but separate as they depart from it, indicating that the words go in different directions.

30. *It is so*—The motion is somewhat like 28, but the finger is held rather more upright, and is passed nearly straight forward from opposite the breast, and when at the end of its course, it seems gently to strike something, though with a rather slow and not suddenly accelerated motion.

31. *Sit down*—The fist is clenched, and the motion of it is then the same as if it held a staff, and gently stamped it upon the earth, two or three times.

32. *Travelling with great rapidity*—The hands are held edge up, extended forward and a little sideways, one in advance of the other, though parallel, they then are agitated a little in the manner of a fan, though with a much more rapid and not so wide a motion, the arms being at rest.

33. *Running*—The arm nearly doubled upon itself, and then the elbow thrown forward and backward, as in the act of running.

34. *Riding on horseback*—The index and middle finger of the right hand, are straddled over the left index finger, representing the rider and the horse, these are then jolted forward to represent the trotting motion of the horse.

35. *Knife*—Hold the left hand clenched near the mouth,

as if it held one end of a strip of meat, the other end of which was between the teeth, then pass the edge of the right hand, as in the act of cutting, obliquing a little upwards from right to left, between the other hand and mouth, so as to appear to divide the supposed meat.

36. *Awl*—The left fore finger is extended, and the right, also extended, is placed across it, and is then turned on its axis, so as to imitate the action of the awl in making a hole.

37. *My offspring*—If an Indian wishes to tell you that an individual present is his offspring, he points to the person, and then with the finger still extended, passes it forward from his loins in a line curving downwards, then slightly upwards, sometimes saying, "That is my child, *illhon minxi*," Dashinga-shinga-we-weet-tah-ohn-na-je.

38. *Strength*—The hands are clenched, the left fore-arm is held almost perpendicularly near the breast, so that the fist is nearly opposite to the throat; the right arm is then carried up between the left and the breast, and continued on over the left fist to the outside of the latter; the right arm is then brought down so as to have the same direction with the other, and the fists rest opposite to each other in a line from the breast. This motion resembles the act of wringing a thick towel. If he would say, "I am strong," he strikes himself upon the breast two or three times with his fist, previously to the motion above described. If he would say, "You are strong," he previously points to you, &c.

39. *Fire*—The act of striking fire with the flint and steel is represented, after which, the ascent of the smoke is indicated, by closing the fingers and thumb of the right hand, holding them in a vertical position with the hand as low as convenient, the hand is then gradually elevated, and the fingers and thumb a little expanded, to show the ascent and expansion of the volume of smoke.

40. *Rabbit*—The fore and little finger of the right hand are extended, representing the ears of the animal; the hand

is then bobbed forward to show the leaping motion of the animal.

41. *Deer*—The fore finger of the right hand is extended vertically, with the back towards the breast, it is then turned from side to side, to imitate the motion of the tail of the animal when he walks at his leisure.

42. *Good*—The hand held horizontally, back upwards, describes with the arm a horizontal curve outwards.

43. *Be quiet, or be not alarmed, or have patience*—The palm of the hand is held towards the person.

44. *Copulation*—The back of the right hand with the fore finger extended, is slapped three or four times in the palm of the left, which is partially closed so as to admit the motion of the other hand within it; at each motion the right hand advances forward in the left, until at the last motion, its fingers are so far advanced as to admit of being sprung two or three times from the thumb, as in the act of sprinkling water.

45. *I will kill you*—Direct the right hand towards the offender, and spring the fingers from the thumb, as in the act of sprinkling water.

46. *Fish*—Hold the upper edge of the hand horizontally, and agitate it in the manner of a fan but more rapidly, in imitation of the motion of the tail of the fish.

47. *Poor*—The two fore fingers extended, with the right as if it was a knife, imitate the motion of cutting the flesh off of the left finger, beginning towards the tip, and cutting with a quick motion directed towards the base; at the same time turn the left finger a little round, so as to expose the different parts to the action of cutting; intimating that the flesh has diminished from starvation.

48. *House or lodge*—The two hands are reared together in the form of the roof of a house, the ends of the fingers upward.

49. *Husband, companion, or in company*—The two fore

fingers are extended and placed together, with their backs upward.

50. *Snow*—The hand is held up about as high as the head, with the fingers suffered to dangle downwards, it is then bobbed a little up and down, as if to throw off drops from the ends of the fingers.

51. *Rain*—The sign for *water* (No. 14,) precedes that for *snow*.

52. *Robe*—The hands are placed near the shoulders, as if holding the ends of the robe, and then crossed, as if drawing the robe tight around the shoulders.

53. *The coming of a person from a distance*—Place the fore finger in a vertical position, with the arm extended towards the point from which the person came, or is to come, then bring it gradually near the body, but not in contact with it, or if he continued on, carry it in the direction he passed.

54. *Snake*—The fore finger is extended horizontally, and passed along forward in a serpentine line. This is also used to indicate the Snake nation of Indians.

55. *Crow nation of Indians*—The hands held out each side, and striking the air in the manner of flying.

56. *Light*—Make the sign of the sun in the eastern horizon, and then extend the hands together, with the palm upwards, and carry them from each other outwards.

57. *Flat-head nation*—One hand placed on the top of the head, and the other on the back of the head.

58. *Pierced-nose nation*—The finger extended, pass it horizontally by the nostrils.

59. *Trade*—First make the sign of *exchange*, (No. 26), then pat the left arm with the right finger, with a rapid motion from the hand passing it towards the shoulder.

60. *Sioux nation*—The edge of the hand passed across the throat, as in the act of cutting that part.

61. *Black-foot nation*—The finger and thumb encircle the ancle.

62. *Arrapaho nation*—The fingers of one hand touch the breast in different parts, to indicate the tattooing of that part in points.

63. *Carrying a pack*—The hands are placed each side of the head, as if they held the strap of the *appas*, which passes round the forehead, in order to relieve that part, by supporting a portion of the weight of the burden; with this motion, two or three slight inclinations of the head and corresponding movements of the hands are also made.

64. *Pretty*—Another sign, beside that marked, No. 43, is the following; curve the fore finger of the right hand, and place the tip on the ridge of the nose between the eyes, so as to represent a high Roman nose, then bring down the hand in a curvilinear manner, until the wrist touches the breast, after which add the sign, No. 42.

65. *No, not, or none*—The hand waved outwards, with the thumb upward. For *yes*, see No. 30.

66. *Destroyed, or all gone, no more*—The hands held horizontally, and the palms rubbed together, two or three times round, the right hand is then carried off from the other, in a short horizontal curve.

67. *Anger*—The fingers and thumb of the right hand, with the ends together and near the breast, then turn the hand round two or three times, so as to describe vertical circles; indicating that the heart is disturbed.

68. *Dissatisfaction, or discontent*—The extended finger placed transversely before the situation of the heart, rotate the wrist two or three times gently, forming a quarter of a circle each time.

69. *Indecision*—The index and middle finger extended and diverged, place them transversely before the situation of the heart, and rotate the wrist two or three times gently, forming each time a quarter of a circle.

70. *Fool*—The finger is pointed to the forehead, and the hand is then held vertically above the head, and rotated on the wrist two or three times.

71. *Swiftness*—The two index fingers are held parallel together, and pointing forward, the right one is then passed rapidly forward.

72. *Shienne nation*—With the index finger of the right hand, proceed as if cutting the left arm in different places with a sawing motion from the wrist upwards—to represent the cuts or burns on the arms of that nation.

73. *Left-handed*—The left hand clenched is held up before the neck, the elbow is then brought in to the side, at the same time giving to the fore arm a twist, so as to bring the closed palm opposite the breast.

74. *I do not understand*—The fingers and thumb of the right hand brought together near their tips, and then approached, and receded, to and from the ear, two or three times, with a quick motion, made within the distance of two or three inches; finish with the sign, No. 65.

75. *I understand*—The same sign with the preceding, excepting the No. 65, which is omitted. The motion of the fingers, is designed to represent the sound entering the ear.

76. *Love or affection*—The clenched hand, pressed hard upon the breast.

77. *Me (I)*—The clenched hand struck gently, and with a quick motion, two or three times, upon the breast. Or, the fingers brought together are placed perpendicularly upon the breast.

78. *You*—Is expressed by simply pointing at the persons, and the same for other objects within view.

79. *Multitude*—First indicate a man, No. 6, or whatever object it may be, and then the sign of a great many, No. 25.

80. *Opposite*—A clenched hand held up on each side of the head, at the distance of a foot or more from it.

81. *Hill*—A clenched hand held up on the side of the head, at the distance of a foot or more from it.

82. *River*—The hand, in the form of a scoop or ladle, is carried to the mouth as if conveying water, and then drawn

along in a horizontal line with the edge downward, about the height of the breast.

83. *Counting, or enumeration*—The fingers and thumbs expanded, count ten; in order to proceed with the enumeration by tens, the hands must be clenched, and if again expanded it counts twenty, and so on, the hands being clenched between every ten. In order to indicate the digits, clench the hands and extend the little finger of the left hand for one, extend also the ring finger for two, and so on, the thumb for five; these must remain extended, whilst the thumb of the right is extended for six, &c. Any number within five, above any number of tens, is indicated by clenching the left hand and crossing the right over it, with the requisite number of fingers extended. For the number of sixteen, exhibit the sign of ten and then extend four fingers, and the two thumbs in the order of enumeration; for seventeen, proceed by extending the fore finger of the right hand, and so on to twenty. In this manner any sum can be denoted, always holding the backs of the hands upward. When enumerating a small number, where a considerable exertion of the memory is requisite, the Indians extend the left hand with the palm upward, whilst, with the index of the right, the fingers are successively bent in to the palm, beginning as before with the little finger, and the greater difficulty in recalling to mind the numbers or events, the more apparent resistance is offered to the inflexion of the finger.

84. *A Chief*—The fore finger of the right hand extended, pass it perpendicularly downward, then turn it upward, and raise it in a right line as high as the head.

85. *Bad*—Make the sign of *good* (No. 42), and then that of *not*, (No. 65.)

86. *Gun*—Hold out the left hand, as in the act of supporting the gun when directed horizontally, and with the right appear to cock it.

87. *Gun-powder*—Appear to take up a pinch of the powder,

and to rub it between the finger and thumb, then turning the hand, spring the fingers from the thumb upward, so as to represent the exploding of the powder.

88. *Ball, or bullet.* Make the sign of the exploding of the powder, then grasp the fore finger of the hand with the remaining fingers and thumb, so that the tip of it, will so extend beyond them, as to represent the ball.

89. *Scissors*—With the fore and middle fingers, imitate the opening and shutting of the blades of the scissors.

90. *Looking-glass*—The palm of the hand held before the face, the fingers pointing upward.

91. *Writing*—The act of writing is imitated by the finger, in the palm of the opposite hand.

92. *Brother*—The sign for a man (No. 6), succeeded by placing the ends of the fore and middle fingers of one hand, together in the mouth.

93. *Sister*—The sign for a squaw (No. 16), after which place the fingers in the mouth as in No. 92.

94. *Cold*—The arms with clenched hands, held up before the breast, thrown into a tremulous motion as if shivering with cold.

95. *Cowardice*—The head stooped down, and the arm thrown up to protect it; a quick motion.

96. *Marching, or travelling moderately*—The hand held vertically as high as the neck, with slightly divided fingers, and rocked edgewise forward and backward upon the wrist, extending the arm a little forwards. This sign resembles that for *inquiry* (No. 27), but differs in the direction of the motion of the hand.

97. *The return of a party through fear*—Begin with the preceding motion, then draw the tips of the fingers and thumb together, and retreat the hand to the body.

98. *Hunting Shirt*—The fore finger and thumb so opposed as to form a curve, are passed near the surface of the body, from the forehead to the abdomen.

99. *Surprise, or astonishment*—Is indicated by placing the hand upon the mouth, to show that language is inadequate to communicate their sensations.

100. *Calumet Dance*—The hand extended with the edge upward, and with the arm waved sideways, with a motion like that of a swing.

101. *Beaver trap*—The two fore fingers brought suddenly together, in a parallel manner, so as to represent the snapping of the steel trap.

102. *Stone*—Close the right hand, and strike the palm of the left hand two or three times with it.

103. *Give it to me*—The hand extended in a pointing position towards the object in request, then brought towards the body with the finger raised vertically, and laid against the breast.

104. *Mountains*—When speaking of the Rocky Mountains, Tarrarecawaho, held up the fingers of his left hand, a little diverging from each other; and to convey the idea of the streams flowing from them, he placed the index finger of his right hand alternately between each two of them, and drew it away in a serpentine manner.

The following signs are extracted from an essay by William Dunbar, Esq., published in the sixth volume of the Transactions of the American Philosophical Society. It will be observed that some of them differ essentially from those which we obtained, and that we have omitted ten of them which correspond with those we have given.

White—With the under side of the fingers of the right hand, rub gently upon that part of the left hand which corresponds with the knitting of the bones of the fore finger and thumb.

Egg—The right hand held up with the fingers and thumb extended, and approaching each other as if holding an egg within.

The same, or similar to what went before—Place the two fore fingers parallel to each other, and push them forward a little.

Snow—Begin with the sign of rain, then the sign of *air* or *cold*, and conclude with the sign of *white*.

Ice—Begin with the sign of *water*, then of *cold*, then the *earth*, and lastly a *stone*, with the sign of sameness or similarity.

Hail—Begin with the sign of *water*, then the sign of *cold*, next the sign of a *stone*, then the same, then the sign of *white*, and lastly conclude with the sign of an *egg*, all which, combined gives the idea of hail.

Frost—Begin with the sign of *water*, then the sign of night or darkness, then the sign of *cold*, then the sign of *white*, and lastly the *earth*.

Cloud—Begin with the sign of *water*, then raise the two hands as high as the forehead, and placing them with an inclination of 15°, let them gently cross one another.

Fire—The two hands brought near the breast touching, or approaching each other, and half shut, then moved outwards moderately quick, the fingers being extended, and the hands a little separated at the same time, as if to imitate the appearance of flames.

Bring, fetch, or give me—The hand half shut, with the thumb pressing against the fore finger, being first moderately extended either to the right or left, is brought with a moderate jerk to the opposite side, as if something was pulled along by the hand. Consequently the sign of water preceding this would convey the expression "give me water."

Earth—The two hands open and extended, brought horizontally near each other opposite to either knee, then carried to the opposite side, and raised in a curve movement, until brought round and opposite to the face.

Cold, or Air—The right hand held perpendicularly upwards, and brought forwards with a tremulous or vibratory motion, until it passes beyond the face.

Big, great, or large—The two hands open placed wide apart on each side of the body, and moved forwards.

Fear, to be afraid, to cause fear—The two hands with the fingers turned inwards opposite to the lower ribs, then brought upwards with a tremulous movement, as if to represent the common idea of the heart rising up to the throat, the three last signs placed in the order given, would convey the idea of a violent hurricane.

Moon—The thumb and finger open are elevated towards the right ear; this last sign is generally preceded by the sign of the night, or darkness.

Hoat—The two hands raised as high as the head, and bending forwards horizontally, with the points of the fingers curving a little downwards.

Clear—The hands are uplifted and spread both ways from the head.

Thunder—The sign of rain, accompanied by the voice imitating the rumbling sound of thunder.

Lightning—First the sign of thunder, then open, or separate the hands, and lastly bring the right hand down towards the earth, in the centre of the opening just made.

Male and female—Note, to distinguish between the male and female, in all cases add for the male a fillip with the fore finger of the right hand on the cheek, and for the female bring the two hands open towards the breast, the fingers approaching, and then move them outwards.

Gelt—Bring the fingers and thumb of the left hand together as if something was held by them, then approach the right hand, and make the motion of cutting across what is supposed to be held in the left hand, and then draw off the right hand, as if pulling away what has been cut.

Dunghill fowl—Bring the thumb and fingers of the right hand together, and holding the hand moderately elevated, move it across imitating the motion of the head of a cock in walking.

Turkey—The open hands brought up opposite to the shoulders, and imitating slowly the motion of the wings of a bird, to which add the last sign.

Duck—The last sign, then the sign of water, and lastly the sign of swimming, which last is performed by the fore finger of the right hand extended outwards, and moved to and fro.

Horse—The right hand with the edge downwards, the fingers joined, the thumb recumbent, extended forwards.

Deer—The right hand extended upwards by the right ear, with a quick puff from the mouth.

Man—With the fore finger of the right hand extended, and the hand shut, describe a line, beginning at the pit of the stomach, and passing down the middle of the body as far as the hand conveniently reaches, holding the hand a moment between the lower extremities.

Woman—The finger and thumb of the right hand partly open, and placed as if laying hold of the breast.

Child—Bring the fingers and thumb of the right hand, and place them against the lips, then draw them away, and bring the right hand against the fore of the left, as if holding an infant. Should the child be male, prefix the sign of a man before the last sign, and if a female, do so by the sign of the woman.

Boy—Bring the fingers and thumb of the right hand to touch the lips, then extend the hands and make the sign of man, then raise the hand with the fingers upwards, placed at the height of a boy.

Girl—Begin with the above sign, and make the sign of woman, and then raise the hand to the height of the girl.

You—The hand held upwards obliquely, and pointing forward.

He, or another—The fore fingers extended, and the hands shut, and fingers brought over one another, or nearly touching, and then separated moderately quick.

Many or much—The flat of the right hand patting on the back of the left hand; which is repeated in proportion to the greater or lesser quantity.

Know—The fore finger of the right hand, held up nearly opposite to the nose, and brought with a half turn to the right and carried a little outwards. Place any of the articles before the last sign; which will then signify, I know, you know, he knows;—both hands being made use of in the manner described, implies to know much.

Now, or at present—The two hands forming each a hollow, and brought near each other, and put in a tremulous motion upwards and downwards.

Come here—The hand stretched outwards, with the palm under, and brought back with a curve motion downwards, and inclining to the body.

Go—The back of the hand stretched out and upwards.

What say you—The palm of the hand upwards, and carried circularly outwards and depressed.

No, nothing, I have none—The hand held up before the face, with the palm outwards, and vibrated to and fro.

From whence come you, say—First the sign of you, then the hand extended open and drawn to the breast; and lastly, the sign of, what say you?

Come—The fore finger moved from right to left, with an interrupted motion, as if imitating the alternate movement of stepping.

Mine—The hand shut and held up to the view.

House—The hand half open, and the fore finger extended and separated, then raising the hand upwards, and give it a half turn, as if screwing something.

Done, or finished—The hands placed edge up and down, parallel to each other, the right hand without, which latter is drawn back, as if cutting something.

Spring season—The sign of cold, to which add the last sign of being done or finished.

Body—The hands with the fingers pointed to the lower part of the body, and then drawn upwards.

Hair—The movement of combing.

III. INDIAN SPEECHES.

[*Referred to as note A in page* 163.]

Speeches of Pawnees, Pawnee Loups, and Pawnee Republicans, at a council held at the Engineer Cantonment October, 1819.

In concluding his address, on opening the Pawnee council, Major O'Fallon requested them, if any subject rested heavily on their minds, to come forward and express themselves without fear. Long-hair (Tarrarecawaho,) immediately arose, and with a firm step placed himself in the middle of the area. He stood for a short time immoveable, then slowly advanced nearer to the agent, and with a very loud, powerful voice, fierce countenance, and vehement gesticulation, thus addressed him:

Father, The Master of Life placed me on this land, and what should I fear? nothing. You are a chief, and I am a chief.

Father, Look at me, and see if I deceive you, when I say that I have but one intention, and that is a good one.

Father, My heart is strong, I say, my heart is strong.

Father, Those who robbed and whipped your people I did not see, I was not present.

Father, Those Republican Pawnees are bad people, they have injured the whites, but I have not, and that is the reason why I am not afraid to see you.

Father, We are fond of pipes, we like to travel to our neighbouring nations, and smoke with them.

Father, I am desirous to go now, and hunt the buffaloe, but when the grass comes up in the Spring, I hope to see you again.

Father, This medal which you see on my neck, is my father's image. It is dear to me, because he presented, and placed it on my neck.

Father, Wherever I have been to visit my father, (Governor Clarke,) or my fathers, I have heard good talk, and mine has been good also, but there are many here who will not give ear to their words.

Father, I am happy to hear, what you say about peace; that we particularly desire, especially with the whites.

Father, Affairs have been bad. I am not a child, I listened to the talk you sent to us, and was therefore not afraid to come and see you. Those whites, and all those people around me, I consider as my children, and am glad to see them.

I tell you that I am poor; who is the cause of it? not myself, it is my young men. That is all I have to say. I give you my hand.

La-ceech-ne-sha-ru, the Knife-chief, a Pawnee Loup.

Father, Here I am before you. You see me. I am poor.

Father, I am a Pawnee wolf, and those you see there (pointing to his band), are Pawnee wolves.

Father, Look at my people, and see if they have any thing belonging to a white man.

Father, I tell you the truth. I am poor.

Father, Amongst my people, I believe, there is not an individual that has injured you. If any one of the other bands can say they have, let them speak.

Father, This medal which hangs upon my breast, I received from my red-headed father below (Governor Clarke). I listened to his words, and on my return I told them to my people, and they believed.

Father, You see that I am old, but I do not recollect that myself, or any of my people, ever injured any of the whites.

Father, Neither my hands, nor those of my young men, have ever been stained with the blood of the Americans.

Father, That is the reason why I have come to listen again in the words of my father.

Father, That is all I have to say. I have finished.

Major O'Fallon.

Grand Pawnees, and Pawnee Republicans; I am not satisfied with what you have said. What you have said is good, but it is not enough. Until you drive those dogs from among you, I will not consider you in any other light than as dogs.

Pa-ne-ca-he-ga, Fool Robe's son, a Pawnee Republican.

Father, I am a Pawnee Republican.

Father, What you have said is true, the Pawnee Republicans are dogs, they do not listen with their ears.

Father, I have never done ill to a white man myself, I have never even taken a knife from him, and my heart is distressed because my young people will not listen.

Father, It is true what Tar-ra-re-ca-wa-ho has said, that we whipped two white men; we did do it.

Father, I am poor, I say, I am poor.

Father, It is true that it is customary for my people to rob white men, when they go to war, but I never knew them to kill one.

Father, My heart is distressed because my young men will not listen, they have no ears.

Father, The offenders have not ears; they were afraid to come and see you, knowing they had done wrong.

Father, I came without fear, on a good horse, which I present to you. My people were afraid that I should come.

Father, I am without fear. I said, when I set out from my village, why should I fear, if my father strikes me, it is no more than a father does to his child.

Father, We are glad to hear your words; we will make peace; we will return to our village, and see what those dogs will do.

Father, That is all I have to say. I have done.

Chief of the Tappage band of the Grand Pawnees.

Father, I have come to see you; here I am, very poor.

Father, I have seen my father below, and this is my great father, I wear round my neck.

Father, When he put this about my neck I heard what he said to me, and have recollected it.

Father, Our young people will not attend to what we say; we talk and repeat to them, but when they lie down, they forget all before midnight.

Father, You ought to have heard, whether my band have injured you or not.

Father, There was a time, when our hands were red with the blood of your people, but since we have been below, it has been washed off.

Father, We visited our father below; he told us, when we met a white man to treat him well, and let him never fear.

Father, I see you are looking on me; I am poor; I have nothing on me of the make of the whites; I have even turned my buffaloe robe to hide its tarnish.

Father, I came here to listen to your words, to hear what you have told us.

Father, You say there is a God above. I know it, when he is angry I hear him speak, (alluding to the thunder.)

Father, I consider you equal to him. You are the same to me.

Father, All you see here are your children; they are poor.

Father, That is all I have to say.

Major O'Fallon.

Pawnee chiefs and soldiers; I called you here to adjust the difference that is between us. I called you here to bring the articles which were stolen from my people. I have not yet seen them. I called you here to bring the dogs that stole them; but I have not seen them; I hope that you have brought them.

My eyes have been looking for them, and my ears have been listening, but I am not satisfied.

The following articles were now given up.

One buffaloe robe, one horse, one pair double barrelled pistols, one bird bag, one tomahawk, one axe, one powder flask, one shot bag.

Fool Robe's son said, there are many articles lost, which my people took from you, and two of the horses gave out on the road, a few miles from this place.*

Long-hair.

Those, who did the mischief, did not come. They were afraid. Here are two of their chiefs.

Major O'Fallon.

Pawnee chiefs and warriors; I wish to know whether or not you are able to punish the offenders; whether or not there are good people enough amongst you, to punish them. Our soldiers are anxious to march against you, but the chiefs restrain them, lest they injure the innocent. That is the reason why I wish to know if you are not able to punish the bad. Our people do not wish to spill innocent blood. Therefore I desire to place their punishment in your own hands.

I have come to this land, not to spill blood, but to prevent its flowing. I have come to give you rest, and peace, and happiness, not to make war. If your arms are not strong enough, come forward and say so; if you are not chiefs, say so.

Pawnees, if I were to see our troops marching towards your nation, tears would fall from my eyes; because I believe that there are some good men among you, whose blood would immediately flow. Red-skins have called us cowards when we have hesitated to spill blood, when it ought to have been spilt. Even some of your chiefs have insulted our people, thinking they would not resent it. I tell you, Pawnees, that we are tired of submitting to insults. My nation is most powerful, and that is the reason why the Great Spirit restrains our arm.

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* One of the horses has been since found.

Come forward, you chiefs, and let me know what is the strength of your arm; my ears are anxious to hear; say, before it is too late, whether you can govern your people or not.

Pe-ta-le-sha-roo, Republican chief.

Father, I am not afraid of these people, these Pawnees you see here. They have never struck me with a whip; (meaning, that when he has chastised his people they have not retaliated upon him.)

Father, I have travelled through all the nations below; they have not injured me.

Father, I have seen people travel in blood. I have travelled in blood myself, but it was the blood of red-skins, no others.

Father, I have been in all the nations round about, and I have never feared a red-skin.

Father, I have seen the time when blood flowed upon the ground. It drew tears from many eyes. But I went down to visit my father, (Governor Clarke,) and returned contented.

Father, I have no longer a desire for war. I delight to sit in peace.

Father, When I went to see my father below, although there was danger in the way, I was not afraid to go alone.

Father, But I am now like a squaw, and instead of carrying the mark of a man, I have that of a woman.

Father, My right arm, and that half of my body is white man, and the other only Indian.

Father, When I returned from below, I related to my people what I had seen, but none of them had ears, they would not hear me.

Father, I have often traded with the whites. I always traded fairly, while the Pawnee Loups did not. Here is a trader who knows me, (Mr. Pappan.)

Father, We will punish the offenders. It is very easy; it is not difficult at all.

Father, I will score the back of him who cut your tent.

Father, It is some time since I have worn this on my neck; I have kept it secreted, because they will not respect it.

Father, After our battles with the people around us, I have gone alone, crying into their villages, and have received no harm. (In other words, Indians have forgiven me for spilling their blood, then why should not the magnanimity of the whites forgive the comparative trifling injuries I have done them.)

Father, When the war party, that robbed your people, returned, I was not told of this act. If I had known it, and had demanded the articles, perhaps they would have been given up to me; but they are now so widely distributed that it is impossible to collect them all.

Father, I have never yet whipped my people, but I intend to begin now. I will punish the offenders as soon as I return home.

Father, I am glad to see you writing down all that has been said. When a man dies, his actions are forgotten, but when they are written down, it is not so.

Father, Some among us have had difficulty with the traders, because they would give but very little vermillion, &c. for our furs.

Father, When I have seen a person poor, and I had a horse to spare, or a blanket, I have given it to him.

Father, From this day I undergo a change; I am now an American, and you shall hear that it is true.

Father, If you hear of my being whipped when I return to my village, consider yourself the cause of it, for I will whip those dogs that insulted you, as you desire me.

Father, You love your children, I love mine.

Father, Be quick, do what you have to do. If you intend to punish us, let us know it.

(This is an artful, politic, Indian. If he is sincere in what he has here said, his change has been a sudden one. When Mr. Dougherty delivered the talk sent by Major O'Fallon to this people, in their village, demanding the stolen articles, &c. this man ridiculed him, saying, that for his part he had nothing but an old pair of shoes that the Red-head had given him, and which he would return.)

Major O'Fallon.

Do you wish to see our warriors among you, to punish these people. I do not wish to see them among you. You, chief of the Pawnee Republicans, (addressing the last speaker,) you say you are able to punish them; I am in hopes that you have not lied; if you have, we must do it ourselves. If my eyes cannot see you punish them, my ears must tell me you have done it—Yes! my ears must tell me it has been well done, that you have given two stripes for every one that those two unfortunate traders have suffered. And you, Long-hair, that have so strong an arm, assist him lest our warriors should be obliged to visit you, when yourself might not be distinguished from the others. I do not yet know you as chiefs, but I wish to know you as such; I want to have some proofs that you are chiefs. When I learn that you have punished those who have done wrong, as our chiefs punish, then I will recognize you. You tell me that your stomachs are empty. I will give you something to fill them. You show me your naked skin; my heart will not let me clothe it, until this difference is settled. Were I to smoke with you on this day, the smoke would not rise; it would fall to the ground. When I shall be able to cover what is past, and to forget it; when I smile upon you in shaking hands, then perhaps I may give you something to eat and to smoke. I come not to beg your friendship; I come not to ask your land or your skins; I ask nothing of you. Pawnees! I wish to be at peace with you, and all the red-skins, I tell you again. I know that the Great Spirit has done little for you; he has done much for us. I come to do something for you, when I see you willing to do something for yourselves. I come to give you advice to enable you to live happily, to calm your troubled minds, and to give peace to your troubled heads.

If in reality you punish those who have offended, and my ears tell me so, I will take you by the hand and smoke with you; but if your ears are unwilling to hear my words, close your ears and do not hear them.

I will work a change among you, Red-skins, and when my arm fails, my bones shall whiten on your plains, for my nation to come and bury.

Pawnee Loups, before you leave this place, I will give you something to make your hearts glad.

Long-hair, if you would make me believe, that you are disposed to behave well, treat those good people (the Pawnee Loups) that reside with you, kindly. Your arm is stronger than theirs; do not raise it against them, unless they insult you. I hope the day is not far distant, when I shall be able to smile on your people, as I now smile on them.

Pawnees, when you find yourselves unable to punish those dogs among you, think that you hear the sound of those bugles from the hills near your village.

Presents were now made to the Pawnee Loups; but to the others only a little tobacco was given, and no chiefs were recognised.

CHAPTER XVII.

Journey by land from St. Louis to Council Bluff—Grand River—Plains at the sources of the Little Platte, the Nishnabottona, &c.—Departure of the Expedition from Engineer Cantonment.

While the transactions above detailed were passing, Major Long had returned from the seat of Government.

On the 24th of April 1820, he arrived at St. Louis, on his way from Philadelphia to Council Bluff, to rejoin the party. He was accompanied by Captain John R. Bell, attached to the exploring Expedition by order from the War Department, and by Dr. E. James, who had been appointed to serve as botanist and geologist, in consequence of recommendations from the Honourable Secretary of the Navy, from Dr. Torrey and Captain Le Conte.

Having procured horses, and equipped ourselves for a journey in the wilderness, we left St. Louis on the 4th of May, intending to proceed by the most direct route across the country to Council Bluff.

The lands immediately in the rear of St. Louis, between the Mississippi and the Missouri, below their junction, have an undulated surface, and a deep alluvial soil. Since their occupation by permanent inhabitants, the yearly ravages of fire have been prevented, and a dense growth of oaks and elms has sprung up.

In this fact we have a satisfactory explanation of the cause of the present want of forest trees in extensive tracts on the Missouri, which appear, in every respect, adapted to the growth of timber. If these lands, called prairies, were at any former period covered with forests, it may easily be supposed, the yearly devastations of fires breaking out in dry seasons, would destroy many of the trees. The forests being thus broken, the growth of grasses and annual plants would be greatly facilitated by the nakedness of the soil, and the free admission of the rays of the sun. Forests attract rain, and impede evaporation, while the reverberation from the surface of vast plains, and deserts, tends to dissipate the clouds and vapours which are driven over them by the winds. In fertile districts like the alluvial lands of the Missouri and Mississippi, a heavy annual growth of herbaceous plants is produced, which, after the autumnal frosts, becomes dry and peculiarly adapted to facilitate and extend the ravages of fire. In a country occupied by hunters, who are kindling their camp fires in every part of the forest, and who often, like the Mongalls in the grassy deserts of Asia, set fire to the plains, in order to attract herbivorous animals, by the growth of tender and nutritious herbage which springs up soon after the burning, it is easy to see these annual conflagrations could not fail to happen.

In the Autumn of 1819 the burnings, owing to the unusual drought, continued until very late in the season, so that the weeds in the low grounds were consumed, to the manifest injury of the forests. Large bodies of timber are so frequently destroyed in this way, that the appearance has become familiar to hunters, and travellers, and has received the name of *deadening*.

After the burning of the grass in the open prairies, the wind, which, at that season, usually blows with great strength from the northwest, carries off the ashes from the general surface into the hollows and small vallies, thus contributing to enrich the latter at the expense of the former.*

The prairie appears to have heretofore extended almost without interruption, for several miles in the rear of St. Louis. The western portions of it are yet naked meadows, without turns or bends. As we followed the little pathway towards Bon Homme we passed large tracts, to which the labours of the sand rat* had given the aspect of a ploughed field.

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* See Wells *On the Origin of Prairies*, in the 4th number of Silliman's Journal.

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* Genus Pseudostoma.* Say. Cheek-pouches exterior to the mouth; incisores naked, truncated; molares sixteen, destitute of radicles; crowns simple, oval; anterior ones double.

Species, *Pseudostoma bursaria*. Body sub-cylindrical, covered with reddish-brown hair, which is plumbeous at base; feet whitish; anterior nails elongated, posterior ones short, and concave beneath.

Mus bursarius, (Shaw Trans. Lin. Soc. Lond. and Gen. Zoology.) Body elongated, sub-cylindrical; *hair* reddish-brown, plumbeous at base, beneath rather paler; cheek pouches capacious, covered with hair, both within and without; obvious exteriorly; whiskers whitish; eyes black; *ears* hardly prominent; *feet* five-toed, whitish, anterior pair robust, with large, elongated, somewhat compressed nails, exposing the bone on the inner side, middle nail much longest, then the fourth, then the second, then the fifth, the first being very short; posterior feet slender, nails concave beneath, rounded at tip, the exterior one very small; *tail* short, hairy at base, nearly naked towards the tip.

This animal is congeneric with the Tucan of Hernandez, which Buffon erroneously considers the same as the *Talpa rubra Americana* of Seba, or *Talpa rubra* Lin., an animal which is however entirely out of the question, and which, if we may be allowed to judge from Seba's figure, is so far from having any specific affinity with the *bursarius*, that it cannot now be regarded as [illegible] animal.

The late professor B. S. Barton, in his Medical and Physical Journal, says, that a species of *Mus* allied to the *M. bursarius* of Shaw, is common in Georgia and Florida, that he examined a living specimen of this animal, and was convinced, that it is no other than the Tucan of Hernandez, and the Tuza or Tozan of Clavigero. He says nothing of its size, but on the same page he remarks, that "another species of Mus, much larger than the Tuza, inhabits west of the Mississippi about latitude 39°, of which very little is known." Dr. Barton was aware that the cheek pouches, in the figure given by Shaw, are represented in an inverted position, but not having seen specimens from the trans-Mississippi country, he was unacquainted with their specific identity with those of Canada, from which those figures were drawn. In our zoological reports to Major Long, in the year 1819, the specimens which we found on the Missouri were recorded under the name of *bursarius* of Shaw. Coxe, in his description of "Carolana called Florida, and of the Meschacebe", in 1741, mentions a "rat with a bag under its throat, wherein it conveys its young when forced to fly."

Several other writers have noticed these animals, of whom Dr. Mitchell, in Silliman's Journal, 1821, mentions the identity of specimens obtained beyond Lake Superior, with the *M. bursarius* of Shaw.

The animals belonging to this genus are distinguished by their voluminous cheek-pouches, which are perfectly exterior to the mouth, from which

* From ψευδης, *falsus*, and στομα, a mouth, in allusion to the false mouths or cheek-pouches.

fields. From the great quantities of fresh earth recently brought up, we perceived the little animals were engaged in enlarging their subterranean excavations, and we watched long, though in vain, expecting to see them emerge from their burrows. It is probable the jarring of the earth under the hoofs of our horses, by giving early notice of our approach, prevented them from appearing at the surface.

In our way we passed the large hepatic spring visited by Mr. Jessup, and described in his report. It rises in the bed of a large brook, and diffuses a strong sulphureous odour

they are separated by the common integument, they are profoundly concave, opening downwards, and towards the mouth.

The incisores which are not covered by the lips, but are always exposed to view, are strong and truncated in their entire width at tip; the superior ones are each marked by a deep, longitudinal groove near the middle, and by a smaller one at the inner margin. The molares, to the number of eight in each jaw, penetrate to the base of their respective alveoles, without any division into roots, as in the genus *Arvicola*, *Lepus*, &c. their crown is simply discoidal, transversely oblong oval, margined by the enamel, and in general form they resemble the teeth of a *Lepus*, but without the appearance either of a groove at their ends, or of a dividing crest of enamel; the posterior tooth is rather more rounded than the others, and that of the upper jaw has a small prominent angle on its posterior face; the anterior tooth is double, in consequence of a profound duplicature in its side, so that its crown presents two oval disks, of which the anterior one is smaller, and in the lower jaw somewhat angulated. All the molares of the lower jaw incline obliquely forward, and those of the superior jaw obliquely backward.

The whole animal has a clumsy aspect, having a large head and body, with short legs, large fore feet, and small hind feet; and although it walks awkwardly, yet it burrows with the greatest rapidity, so that the difficulty of obtaining specimens may be, in a great degree, attributed to the facility with which the animal passes through the soil, in escaping from the vicinity of danger.

They cast up mounds of loose earth, which, like those of the blind rat, (*Spalax typhlus*,) have no exterior opening. These elevations have been aptly compared, by Lewis and Clark, to such heaps of earth, as would be formed by the emptying of the loose contents of a flower-pot upon the soil. The mounds are of various dimensions, from the diameter of a few inches only, to that of several yards; the quantity of earth employed consequently varies from a pint to two or three bushels.

So entirely subterraneous is the life of this animal that it is rarely seen: and many persons have lived for many years surrounded by their little edifices, without knowing the singular being by whose labours they are produced.

It is known by the names of *sand rat*, *gopher*, *pouched-rat*, *salamander*, &c.

perceptible at a distance of one hundred yards. It probably derives its mineral impregnation from some decomposition in the alluvial substances, through which it rises to the surface.

Eight or ten miles west of St. Louis, forests of oak and hickory begin to occur, and become more frequent towards Alexandria and Bon Homme. At evening we descended into the deep cotton-wood forests of the Missouri bottom, and a little before sunset arrived on the bank of that majestic river. Here we were politely received, and entertained in the house of a gentleman formerly of New York. A large and splendid collection of books, several articles of costly furniture, and above all, manners and conversation, like those of the better classes in our cities, formed here a striking contrast to the rude and solitary cabin, and the wild features of nature, in a spot where the labours of men had as yet produced scarce a perceptible change.

On the ensuing morning, May 5th, we crossed the Missouri above Bon Homme. The forests on the north side of the Missouri were here narrow, and confined principally to the vallies.

Pond fort where we halted to dine, was at this time the residence of a single family. In the late war, the inhabitants of the surrounding country had collected their families, and their cattle, at this place, building their temporary residences in the form of a hollow square, within which their cattle and horses were enclosed at night.

In the pond, which lies along the north side of the fort, the nelumbium was growing in great perfection. Its broad orbicular leaves are somewhat raised from the water, almost concealing its surface. Its showy yellow flower, when fully expanded, is larger, as remarked by Nuttall, than that of any other plant indigenous to the United States, except the Magnolia macrophylla. The nuts, of which there are several immersed in the receptacle of each flower, have, when ripe, the size, and the general appearance of small acorns, but are much more palatable. The large farinaceous root is sometimes used by the Indians as an article of diet, as are also the nuts.

Our path lay through extensive and fertile meadows, stretching away to the distant horizon, and bounded sometimes by the verge of the sky, and sometimes by the margin of a forest. The elk, the deer, and the bison, the indigenous inhabitants of these delightful meadows, had been long since driven away by the incursions of the white settlers, scattered at remote intervals on the borders of the forests. The dense and uniform growth of grass, had risen untrodden and uncropped, and was now waving with ceaseless undulations, as the wind swept lightly over the surface of the plain. The slender and graceful panicles of the Heuchera Americana rising above the grass, resembled a grove of spears, bristling above the heads of an embattled host. Along the margins of the brooks, we noticed the beautiful spiræa opulifolia, and a slender species of viburnum, bending under their clusters of snowy flowers.

Through the day, the weather had been fine but warm. At sunset a thunder storm rose in the west, and the day was succeeded, almost without any interval of twilight, by the most impenetrable darkness. The wind soon rose to a tempest, and hailstones of uncommon magnitude, began to fall, accompanied with thunder and lightning. Our first thought was to dismount from our horses, and shelter ourselves from the hail, on the leeward side of their bodies. We were in the middle of an extensive prairie, where no other protection could be looked for. The hailstones, however, diminished in size, and soon ceased to fall, but such torrents of rain ensued, that the plain became inundated, and the frequent flashes of lightning, were reflected to our eyes, from the surface of a vast lake. The plains in many places having little inclination, the water of a sudden shower is drained off less rapidly than it falls. After raging with great violence for a short time the storm ceased; but the darkness was so intense, that we did not arrive at the settlement, where we proposed to lodge, until a late hour in the night.

Soon after crossing the Missouri, we had ascended so far as to reach the general level of the great woodless plain, and after travelling a few miles, we found the surface sloping to the northeast towards the Mississippi. In the afternoon, we crossed the Darden which enters the Mississippi eight miles above the mouth of the Illinois, and on the following morning the Cuivre, tributary to the same river, ten miles above the other. The point between the Missouri and Mississippi, near their confluence, is raised in the highest parts, probably less than one hundred and fifty feet above the water table. It is of a deep and fine soil, which would appear rather to have subsided from the waters of a quiet ocean, than to have been brought down from above, and deposited in its present situation by the rivers. Between the sources of the streams which descend from either side of this narrow cape, extends an irregular tongue of land, destitute of timber, and every where nearly of the same elevation; as if it had been a part of the great plain, left naked at the retiring of the ocean, and in which the vast vallies of the Missouri and Mississippi, had since been excavated by the operations of those streams. The smaller rivers of this region, appear, both in extent and direction, to have been wholly independent of any peculiar conformation of the original surface, on which they commenced their course, and their present beds gradually deepening and descending in the nearest direction, towards the vallies of the great rivers, are in every respect such as we may suppose to have resulted from the wearing away of a great and uniform plain. At a house where we rested in the middle of the day, and which was in the highest part of the country between the Missouri and Mississippi, here sixty miles distant from each other, a well had been sunk sixty-five feet without finding water. This well passes through several strata of loam, clay, and sand, then through a narrow horizontal bed, of that peculiar substance, called chalk, by Mr. Schoolcraft;* which is here intermixed with numerous angular fragments of flints, and terminates at the surface of a stratum of blue compact limestone, abounding in organic remains. We were informed, that among other things brought up from this well, were masses of carbonized wood, bearing the marks of the axe. But as these could not be found, we thought it reasonable to attribute some part of the account to the active imagination of the narrator.

From the *divide* at the sources of the Cuivre, we overlooked an extensive tract of undulating meadow, and could distinguish on the distant horizon, the wide valley, and the extensive forests of Loutre lick.

This stream is the first deserving notice, which enters the Missouri from the north. Its sources are several miles to the northwest of those of the Cuivre. In its valley the rocky substrata of the plain are exposed, for an extent of many miles. Near Van Babber's, where we arrived a little before sunset on the 6th, there is, in the middle of the creek, a large brine spring. Over this has been placed a section of the hollow trunk of a tree, to prevent the intermixture of the fresh water of the creek.

The sandstone, from which this spring issues, is granulated and glimmering, like that about the old lead mines of St. Michael. Like that, it is in horizontal strata, and exhibits sufficient evidence of being a continuation of the same stratum. Perceiving the same indications of fossil coal, lead, and other minerals here, as were known to exist in the same range of country on the other side of the Missouri, we listened with a credulity which seemed rather to disappoint and surprise our host, to his account of the phenomena, that had appeared from time to time in his neighbourhood. The combustion of a coal-bed, or the decomposition of a mass of pyrites, has, we believe, given rise to many more astonishing stories than he related.

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* Views of the Lead Mines, pp. 180, 227.

He gave an account of several luminous appearances, that had been seen at the breaking up of winter, or in unusually rainy seasons, or at other times of the year. These had been witnessed by many persons of unquestionable veracity, but so great had been their terror on the occasion, that they could never afterwards recollect the precise spot, where the light had appeared to them. He told us of two itinerant preachers who had encountered an indescribable phenomenon, at a place about nine miles east of Loutre lick. As they were riding side by side at a late hour in the evening, one of them requested the other, to observe a ball of fire attached to the end of his whip. No sooner was his attention directed to this object, than a similar one began to appear on the other end of the whip. In a moment afterwards, their horses and all objects near them were enveloped in wreaths of flame. By this time the minds of the itinerant preachers were so much confounded, that they were no longer capable of observation, and could therefore give no further account of what happened. He also stated as a fact, authenticated by many credible witnesses, that a very considerable tract of land near by, had been seen to send up vast volumes of smoke, which rose through the light and porous soil, like the smoke through the covering of a coal-pit. This had in one instance been witnessed by a son of the celebrated Col. Boon, and was at first mistaken for a prairie on fire. This phenomenon also occurs at the breaking up of winter, or at such seasons as the earth is drenched by uncommon quantities of rain.

Within a few miles of the Lick, are eight or nine rude furnaces disposed in the direction of a straight line, extending about two miles. He stated, that it was not known by whom, or when they were built, nor could it be ascertained for what purpose. It was evident they had been used, but no slag cinders or any thing of the kind had ever been found, nor was it possible to conjecture for what purpose the furnaces had been constructed. We regarded all these accounts and many others of a similar character, as a sort of traditionary evidence of the accidental discovery, at some former time, of lead, coal, or pyrites, and that this discovery by the ignorance and credulity of the people, had been magnified into an object, to which they had at length learned to ascribe a mysterious and indefinite importance.

Immediately about Loutre lick the surface was rocky and uneven, low cliffs of light gray sandstone, fringed with tufts of the dark green Pteris atropurpurea, and the black stiped asplenium, overhung the margin of the brook, where the inconspicuous flowers of the prinos lævigatus and zanthoxylon fraxineum, and the blue spikes of the amorpha fruticosa, were just expanding.

Beyond Loutre lick, the road traverses, longitudinally, that great woodless plain thirty miles in length, called the Grand Prairie. It varies in width from one to ten or fifteen miles. The soil is deep and fertile, closely covered with grasses interspersed with a proportion of gaudy euchromias and lichnedias, with the purple and yellow pedicularia, the tradescantia, and many beautiful astragali.

At Thrall's settlement, sixty miles above Loutre lick, the floerkea proserpinacoides* is found in great abundance, in open fields and by the road side, reclining its flexile and delicate stem upon the species of bidens, polyonum &c., common in such situations. It grows much larger here than at Albany, the only locality where we have met with it east of the Mississippi, and its leaves, instead of being quinate, are usually composed of six leafits. In neither place does it show any preference to marshy grounds, as the newly proposed name, *palustris*, would seem to imply. Our course, inclining considerably towards the Missouri, made it necessary to leave the elevated region of the plains and betake ourselves to the forests, soon after passing the Grand prairie. In these forests the linden, the hop horn beam, maple, beech, and ash, attain an uncommon magnitude. The blue beech, (ostrya virginica) sometimes occurs, and is of a larger growth than in New England.

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* Willdenow. F. palustris. Nuttall.

Extensive and very accessible beds of coal have been opened near Thrall's plantation. The inhabitants assert that, in sinking wells the trunks of large trees have been met with, at a great depth below the surface. We could, however, discover no satisfactory confirmation of this statement. The soil appeared to us to exhibit no evidence of having been disturbed at any period, since the deposition of the coal beds, and the accompanying sandstones.

On the 8th of June we arrived at Franklin. Here we delayed several days, in the expectation of receiving from Washington some farther instructions, and the supply of funds necessary for the prosecution of the duties of the expedition. Having anxiously awaited one weekly arrival of the mail, and being disappointed of the expected communications, Major Long resolved to continue the journey, and to proceed in the accomplishment of the services assigned him, as far as the means then at his command would allow. As the great part of our proposed route to Council Bluff lay through the wilderness, we now thought it necessary to procure two horses in addition to those we already had, one of them to be loaded with provisions, and the other for the use of a man, whom we had engaged to accompany us.

We left Franklin on the 14th, and proceeding by a rugged and circuitous road across a tract of hilly forests, arrived at Charaton the same evening.

From Charaton to the mouth of Grand river, *the trace*, as the paths are here called, passes through a tract of low alluvial lands, partly covered with forests, but all extremely fertile. Here we were to take leave of the settlements, and to pursue the remainder of our journey through the wilderness, after dining in the cabin of a settler, we crossed Grand river, and betook ourselves to the course we thought proper to pursue, through a tangled and pathless forest. This brought us after a few hours, to the border of an extensive plain. Our horses, somewhat unaccustomed to travelling in woods, and particularly the pack-horse being young and untutored, gave us much trouble.

After ascending into the prairie, as the night came on, we were compelled to go a mile or two off from our course, in search of water and wood for our encampment; at length finding a suitable place on the bank of a small stream, called Doe creek, discharging into Grand river, we kindled a fire, cooked, and ate our supper of bacon, pilot bread and coffee, and as we had no tent, spread our blankets under the shelter of a large tree and laid ourselves down to rest. The hooting of owls, together with the howling of wolves, and the cries of other nocturnal animals, as we were yet unaccustomed to them, occasionally interrupted our slumbers. On the following morning, however, we found ourselves well refreshed, and were prepared to resume our journey at an early hour.

The road known by the name of Field's trace, ascends from Charaton on the east side of Grand river, about sixty miles, thence running nearly northwest through the immense plains of the Little Platte, the Nishnebottons, and the Mosquito river, to Council Bluff. At the mouth of Grand river we had learned, that the eastern tributaries of that stream were much swollen, and were therefore difficult to cross; accordingly we determined to ascend along the ridge between that river and the Little Platte, until we should fall in with the trace.

We were detained several hours in searching for a place, where we might cross Doe creek. Though a very inconsiderable stream, its steep muddy banks were now almost filled, by the reflux occasioned by the freshet in the Missouri. It was not without great difficulty we at length effected a passage, at a point three miles distant from our encampment, thence directing our course by the compass, we travelled north, 45° west, twenty-two miles. In this distance we crossed three large creeks, two of them running eastward into Grand river, the other westward to the Wahconda.

In the plains we met with nothing to obstruct travelling. They had been perfectly denudated by the burning of the last season, and the annual growth of grasses and weeds, had as yet risen but about a foot from the ground. Among the grasses are intermixed great numbers of the legumina, with pinnated leaves, and these are so commonly canescent as to give their peculiar silvery colour to the whole plain. This effect is the more striking, when a slight breeze agitates the leaves of the numerous species of astragalus, psoralea, baptisia, and the beautiful amorpha canescens, all of which have their inferior surfaces beset with a shining silk-like down.

In the afternoon of the 14th, a storm of rain commenced, which continued with little intermission for several days. Having no tent we were much exposed to the weather, but at night we constructed a partial shelter, by stretching our blankets over the spot on which we laid down to rest.

As we approached the sources of Grand river, the country became more hilly. Horizontal limestone, like that about St. Louis, appears in the sides of the deep vallies.

In the scanty soils along these declivities, the ferula fœniculacea sometimes occurs, diffusing its powerful and peculiar odour, perceptible after a shower at the distance of several rods.

18th.—The rain of the preceding day, continued with increased violence during the night. Our encampment was completely inundated, and the wind so high as to render our blanket tent wholly useless. The small port folio, in which we had deposited such plants as we wished to preserve, had been placed for a pillow in the most sheltered part of the tent, and covered with a coat, but these precautions and all others we could adopt were unavailing, and the collection of plants we had then made was lost.

Wishing to deviate as little as possible from the course we had assumed, and which we knew it was necessary to pursue, if we would follow the most direct route to Council Bluff, we descended on the 19th, into a broad and densely wooded valley on our left. After crossing a part of this valley, through heavy forests of ash, sycamore, and cotton-wood, our progress was checked by a river of some magnitude, and so swollen and turbulent in consequence of the late rains, that we thought it advisable not to attempt the passage. We therefore relinquished our course, and being a long time detained in painful and fatiguing exertions to extricate ourselves from the forest, regained towards evening the open plain and encamped.

We had now ascended about eighty miles from the mouth of Grand river. The country we had passed is fertile, and presents such an intermixture of forests and grassy plains, as is extremely pleasing to the eye. Towards the north the hills become gradually more and more elevated. The discontinuance of the horizontal limestone, the disclosure in the deep vallies of the more ancient varieties of sandstone, and the frequent occurrence in the soil of small rounded masses of granite, gneiss, and other primitive rocks, indicates an approach towards the margin of the secondary basin. In the deepest vallies about the sources of Grand river, we observe a very hard semi-crystalline sandstone, in rather indistinct strata, and containing apparently few remains either of plants or animals. It is, in almost every respect, similar to that sandstone, which, in the valley of Lake Champlain, rests along the skirts of the granitic mountains of Ticonderoga, Crown Point, and Westport, and supports there a small stratum of compact limestone. Containing few fragments rounded by attrition, being almost destitute of cement, and retaining much uniformity of character in different localities, it has a manifest resemblance to that most ancient of sandstones, which in the mountains of New England, is associated with the granular limestone, and has sometimes been called granular quartz.* Indeed we have no hesitation in believing, that at some point near the sources of the De Moyen and Grand river, the primitive rocks approach near the surface. There is here a stratum of newer sandstone, superimposed upon that above noticed, and bearing marks of having been contemporaneous to some formation of coal, but it is not of sufficient thickness in the parts we examined, to justify an opinion, that it contains any valuable beds of that mineral. Leaving the immediate neighbourhood of the river, there is an ascent of several miles, to the level of the great woodless plain. The bottom, and part of the sides of the vallies are covered with trees, but in proportion to the elevation, the surface becomes more unvaried and monotonous. These vast plains in which the eye finds no object to rest upon, are at first seen with surprise and pleasure, but their uniformity at length becomes tiresome.

For a few days the weather had been fine, with cool breezes, and broken, flying clouds. The shadows of these, coursing rapidly over the plain, seemed to put the whole in motion, and we appeared to ourselves as if riding on the unquiet billows of the ocean. The surface is uniformly of the description, not inaptly called *rolling*, and will certainly bear a comparison to the waves of an agitated sea. The distant shores and promontories of woodland, with here and there an insular grove of trees, rendered the illusion more complete.

The great extent of country contemplated at a single view, and the unvaried sameness of the surface, made our prospect seem tedious. We pursued our course during the greater part of the day along the same wide plain, and at evening the woody point in which we had encamped on the preceding night, was yet discernible.

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* Eaton's Index to the Geology of the Northern States. First edition.

Nothing is more difficult than to estimate by the eye, the distance of objects seen in these plains. A small animal, as a wolf or a turkey, sometimes appears of the magnitude of a horse, on account of an erroneous impression of distance. Three elk, which were the first we had seen, crossed our path at some distance before us. The effect of the *mirage*, together with our indefinite idea of the distance, magnified these animals to a most prodigious size. For a moment we thought we saw the mastodon of America, moving in those vast plains, which seem to have been created for his dwelling place. An animal seen for the first time, or any object with which the eye is unacquainted, usually appears much enlarged, and inaccurate ideas are formed of the magnitude and distance of all the surrounding objects; but if some well known animal, as a deer or a wolf, comes into the field of vision so near as to be recognised, the illusions vanish, and all things return to their proper dimensions.

Soon after we had left our encampment, on one of the bright sunny mornings which occurred, when we were in the country near the sources of Grand river, we discovered as we thought, several large animals feeding in the prairie, at the distance of half a mile. These we believed could be no other than bisons, and after a consultation respecting the best method of surprising them, two of our party dismounted, and creeping with great care and caution, about one-fourth of a mile through the high grass, arrived near the spot, and discovered an old turkey, with her brood of half grown young, the only animals now to be seen.

On the evening of the 20th May, we encamped in a low muddy bottom, overgrown with nettles and phacelias, but the only place we could find combining the three requisites, grass for our horses, and wood and water for ourselves. Here we were so tormented by the mosquitoes, harassed and goaded by the wood-ticks, that we were glad to seek relief by mounting our horses, at the earliest appearance of light on the following morning. The dew had been so heavy, that it was falling in drops from the grass and weeds where we had lain, and our blankets were dripping as if they had been exposed to a shower. We proceeded on our course about thirty miles, and encamped early in the afternoon. Having ascended Grand river nearly to the point, where we believed Field's trace must cross it, we directed our course more to the west, and had already crossed several streams running to the south, supposed to be the upper branches of the Little Platte.

The utmost uniformity prevails in the appearance of the country about the sources of the Little Platte, Nishnebottona, and other Northern tributaries of the Missouri. Near one of these small rivers we discovered the trace of an Indian war party, which appeared to have passed very recently towards the Missouri. After our arrival at Council Bluff, we had farther information of these Indians, who were a war party of Sauks and Foxes from the Mississippi, and had committed many depredations upon the Missouri Indians, and some upon the whites. We were considered very fortunate in not having fallen in with them; as it was believed, they would not have hesitated to rob, and perhaps destroy any party of whites as weak as ours.

Remains of bisons, as bones, horns, hoofs, and the like, are often seen in these plains; and in one instance, in a low swamp surrounded by forests, we discovered the recent track of a bull, but all the herds of these animals, have deserted the country on this side of Council Bluff. The bones of elk and deer, are very numerous, particularly about certain places, which, from the great number of tent poles, scaffolds, &c., appear to be old Indian hunting camps, and the living animals are still to be found here in plenty. As we rode along these boundless meadows, every object within several miles became visible; the smallest shrub rising a few inches above the surface of the green expanse, could be seen at a mile distant.* Some large agarics and a gigantic lycoperdon peculiar to these regions, are the most conspicuous objects, by which the uniformity of the plains is varied, and these may be seen sometimes at the distance of two or three miles.

On the evening of the 24th, we arrived on the bank of a beautiful river, at a grove of ash and cotton-wood trees. We had scarce dismounted from our horses, when a violent thunder shower commenced; the rain fell in such torrents as to extinguish our fire, and the wind blew so violently, that our blanket tent could afford us no protection. Many large trees were blown down in the point of woods where we lay, and one fell a few yards from our camp. As the night was extremely dark, we thought the danger of moving, at least equal to that of remaining where we were, and spent part of the night in the greatest anxiety, listening to the roar of the storm, and the crashing of the timber. As our horses were dispersed about the wood, we had scarce a hope they could all escape uninjured.

On the day following, after we had rode about eighteen or twenty miles, we observed the surface of the country to become suddenly hilly, and soon after were surprised by an unexpected view of the wide valley, the green meadows, and the yellow stream of the Missouri. A little after noon, we encamped in a meadow on the river bottom, and by ascending one of the neighbouring bluffs, sufficiently elevated to overlook a large extent of the surrounding country, we were enabled to discover that we had arrived at the Missouri, at a point about six miles below the confluence of the great river Platte.

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* A ceanothus smaller than C. americanus, the amorpha canescens, and the symphoria racemosa, are almost the only shrubs seen in the prairies.

On the precipitous and almost naked argillaceous hills, which here bound the Missouri valley, we found the oxytropis lambertii, and the great flowering pentstemon; two plants of singular beauty. Here also we saw, for the first time, the leafless prenanthes, the yellow euchroma, and many other interesting plants. It would seem that several species of plants are distributed along the course of the Missouri, but do not extend far on either side. Probably the seeds of these have been brought down from their original localities, near the sources of the river. That the distribution of plants is sometimes effected in this way, there can be no doubt, as in the instance of the portulacca with pilose leaves,* and other natives of of the high and sandy plains of the Arkansa, which are sometimes found transplanted into the deep forests and fertile soils of the hilly region; but the agency of rivers in this respect appears much less important, than without particular examination, we might be inclined to imagine. In ascending the Missouri, the Arkansa, or any great river, every remove of forty or fifty miles, brings the traveller to the locality of some plants, not to be seen below. This is perhaps less the case with rivers running from east to west, or from west to east, than with those whose course in a different direction, traverses several parallels of latitude.

On the 27th, we swam across Musquito creek, and after a ride of near thirty miles along the Missouri bottoms, encamped near the mouth of the Boyer, about six miles from the wintering place of the party. Early on the following morning, we left our encampment, and were soon after cheered by the report of guns discharging at the Cantonment. The sight of the trading establishment, called Fort Lisa, gave us more pleasure than can easily be imagined, except by those who have made journeys similar to ours, and have felt the deprivation of all those enjoyments, which belong to the habitations of men. At ten, A. M. we arrived at the *Boyer*, which Major Long immediately crossed on a small *raft*, leaving Captain Bell, and Dr. James, with the horses and baggage to wait until some soldiers could be sent out to assist in crossing. These arrived in a few hours, and before three o'clock we had crossed the Boyer, and the Missouri, and found ourselves surrounded by our friends at Engineer Cantonment.

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* Nuttall's Travels into Arkansa, p. 183.

In the early part of June, 1820, arrangements were completed for the departure of the Exploring Expedition from their winter cantonment near Council Bluff. By an order of the Honourable Secretary of War, dated 28th February, Major Long had been instructed to explore the country from the Missouri westward to the Rocky Mountains, and thence proceeding southward along the base of those mountains to the Arkansa, to despatch a division of his party down that river. The following orders were issued by Major Long, briefly sketching the proposed route, and assigning appropriate duties to each individual of the party.

Engineer Cantonment, Council Bluff.
June 1st, 1820.

Orders.

Agreeably to the instructions of the Honourable Secretary of War, the further progress of the Exploring Expedition up the Missouri is arrested during the present season. By the same authority an excursion, by land, to the source of the river Platte, and thence by way of the Arkansa and Red rivers to the Mississippi, is ordered. The Expedition will accordingly proceed on this duty as soon as practicable, and be governed by the order of the 31st March, 1819, issued at the United States' Arsenal, near Pittsburgh, so far as it may be applicable. The duties therein assigned to Major Biddle will be performed by Captain J. R. Bell attached to the expedition by order of the War Department, with the exception of those parts which relate to the manners, customs, and traditions of the various savage tribes which we may pass. The duties thus excepted will be performed by Mr. Say. The duties assigned to Dr. Baldwin and Mr. Jessup, by the order alluded to, will be performed by Dr. E. James, employed for these purposes by the sanction of the Secretary of War. In these duties are excepted those parts which relate to Comparative Anatomy, and the diseases, remedies, &c. known amongst the Indians; which will also be performed by Mr. Say.

Lieutenant Graham will take charge of the United States' steam boat Western Engineer, and proceed down the Missouri to the Mississippi with the remaining part of the crew originally attached to the boat, on the performance of duties assigned him by special order.

The detachment from the rifle regiment, attached to the Expedition by order from the commanding officer of the 9th military department, will accompany the expedition in their route from this place to Belle Point on the Arkansa, under the immediate command of Lieutenant Swift, who will inspect daily their arms and accoutrements, and report their condition to the commanding officer. He will receive such instructions from the commanding officer as occasion may require in relation to the discharge of his duties.

Guides, interpreters, hunters, and others attached to the expedition, will perform such duties as may be assigned, from time to time, by the commanding officer.

The duties of the expedition being arduous, and the objects in view difficult of attainment, the hardships and exposures to be encountered, requiring zealous and obstinate perseverance, it is confidently expected, that all embarked in the enterprize will contribute every aid in their power, tending to a successful and speedy termination of the contemplated tour.

S. H. Long, *Maj. Engrs.*
Commanding Exploring Expedition.

The party, as now arranged, consisted of the following persons:

S. H. Long, Maj. U. S. Topographical Engineers, commanding the expedition.

J. R. Bell, Captain Lt. Artillery, to act as Journalist.*

W. H. Swift, assistant Topographer, commanding guard.

Thos. Say, Zoologist, &c.

E. James, Botanist, Geologist, and Surgeon.

T. R. Peale, assistant Naturalist.

Saml. Seymour, Landscape Painter.

Stephen Julien, Interpreter, French and Indian.

H. Dougherty, Hunter.

D. Adams, Spanish Interpreter.

Z. Wilson, Baggage Master.

Oakley and Duncan, Engagees.

Corporal Parish, and six privates of the U. S. Army.

To these we expected an addition, on our arrival at the Pawnee villages, of two Frenchmen, to serve as guides and interpreters, one of them having already been engaged.

Twenty-eight horses and mules had been provided, one for each individual of the party, and eight for carrying packs. Of these, six were the property of the United States, being furnished by the commanding officer at Camp Missouri; the remaining sixteen were supplied by Maj. Long, and others of the party. Our saddles, and other articles of equipage, were of the rudest kind, being, with a few exceptions, such as we had purchased from the Indians, or constructed ourselves.

Our outfit comprised the following articles, of provisions, Indian goods, &c.; viz. 150lb. of pork, 300lb. of biscuit, 3 bushels of parched corn meal, 5 gallons of whiskey, coffee

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[*] It will be perceived, that in the following narrative, no reference has been made to the notes or journal of Captain Bell, the reason of which is, that his journal, in the form of a report, was submitted to the Secretary of War, and consequently the compiler has had no opportunity of consulting it.

coffee, 30lb. sugar, and a small quantity of salt, 5lb. vermillion, 2lb. beads, 2 gross of knives, 1 gross of combs, 1 doz. fire steels, 300 flints, 1 doz. gun worms, 2 gross of hawk's bells, 2 doz. mockasin awls, 1 doz. scissors, 6 doz. looking glasses, 50lb. tobacco, and a few trinkets, 2 axes, several hatchets, forage bags, canteens, bullet-pouches, powder horns, tin canisters, skin canoes, packing skins, pack cords, and some small packing boxes for insects, &c.

The gentlemen of the party were supplied with such instruments as were deemed indispensably requisite in their several pursuits. The instruments for topographical purposes were, three travelling, and several pocket compasses; one sextant, with radius of five inches; one snuff box sextant; one portable horizon with glass frame and mercurial trough; one and an half pounds mercury, in a case of boxwood; two small thermometers; several blank books, port folios, &c.

The hunters, interpreters, and attendants were furnished with rifles or muskets; the soldiers were armed exclusively with rifles, and suitably equipped. Our stock of ammunition amounted in all to about 30 pounds of powder, 20 of balls, and 40 of lead, with a plentiful supply of flints, and some small shot.

Several of the Indians about Council Bluff, to whom our proposed route had been explained, and who had witnessed our preparations, affected to laugh at our temerity, in attempting what they said we should never be able to accomplish. They represented some part of the country, through which we intended to travel, as so entirely destitute of water and grass, that neither ourselves nor our horses could be subsisted while passing it. Barony Vasquez, who accompanied Captain Pike in his expedition to the sources of the Arkansa, assured us there was no probability we could avoid the attacks of hostile Indians, who infested every part of the country. The assault which had been recently made by a party of the Sauks and Foxes, upon a trading boat belonging to Messrs. Pratte and Vasquez, on the Missouri above Council Bluff, in which one man was killed, and several wounded, had at this time spread considerable terror among those in any degree exposed to the hostilities of the Indians.

With these prospects, and with the very inadequate outfit above described, which was the utmost our united means enabled us to furnish, we departed from Engineer Cantonment, at 11 o'clock, on the 6th of June.

The path leading to the Pawnee villages runs in a direction a little south of west from the cantonment, and lies across a tract of high and barren prairie for the first ten miles. At this distance it crosses the Papillon, or Butterfly creek, a small stream discharging into the Missouri, three miles above the confluence of the Platte. Lieutenant Graham and Mr. J. Dougherty accompanied us about five miles on our way; we were also met by Lieutenant Talcott from Camp Missouri, who crossed the bluffs on foot to take leave of us. Much delay was occasioned, as we passed along, by the derangement of the packs, the obstinacy of the mules, and the want of dexterity and experience in our engagees; we however arrived early in the afternoon at the Papillon, where we encamped.

The Papillon, although it traverses a considerable extent of country, was at this time but a trifling stream. Its channel is narrow, the banks steep, and like many other streams, which have their whole course in these arid plains, it is nearly destitute of water, except in rainy seasons.

During the night some rain fell, but as we were furnished with three tents, sufficiently large to shelter all our party, we experienced little inconvenience from the storm. Our baggage was also effectually protected, being laid in heaps, and covered with bear-skins; which were also spread over it when placed upon the pack-horses, during our march by day.

We had each two small blankets, which were carried upon our horses, one being placed under the saddle, and the other upon it. These, with the addition, in some instances, of a great coat, or a blanket-capot, and a valise or a pair of bolsters, to supply the place of a pillow, were our only articles of bedding.

On the morning of the 7th a new disposition was made, in relation to the pack-horses, a man being appointed to attend particularly to each. We breakfasted, and recommenced our journey at an early hour, and moving forward at an easy pace, arrived about ten o'clock at the Elk-horn, a considerable river, tributary to the Platte. On the preceding evening, we had been joined at our camp by a party of three or four Frenchmen, on their way to a hunting camp of the Omawhaws to trade. We purchased of them two small brass kettles, to complete our supply of camp furniture. One of these men had been of Pratte and Vasquez's party, at the time of the late attack, and had received, in that affair, a wound in the back from a rifle ball, which was yet unhealed. In the morning they accompanied us to the Elk-horn, where the wounded Frenchman was one of the first to strip and plunge into the river. Surprising accounts are given of the hardihood, and patience under suffering, manifested by the Indians; but we have rarely seen one of them exhibit a more striking instance of insensibility to pain, than this Frenchman.

The Elk-horn, called *Wa-ta-tung-ya* by the Otoes, is, where we crossed it, about thirty yards wide, and during a great part of the year, too deep and rapid to admit of being forded. At this time our horses were barely able to keep their feet, in crossing the deepest part of the channel. Our heavy baggage was ferried across in a portable canoe, consisting of a single bison hide, which we carried constantly with us. Its construction is extremely simple; the margin of the hide being pierced with several small holes, admits a cord, by which it is drawn into the form of a shallow basin. This is placed upon the water, and is kept sufficiently distended by the baggage which it receives; it is then towed or pushed across. A canoe of this kind will carry from four to five hundred pounds. The squaws, who are exceedingly expert in this sort of navigation, transport not only their baggage, but their children, and sometimes adults, across large rivers, in these canoes and with the most perfect safety. They place their children on the baggage, and convey the whole across the stream, by swimming themselves, and urging their charge before them to the opposite shore. It is rare that any unpleasant accident occurs in this primitive mode of ferrying.* The Elk-horn enters the Platte about fifty miles above the confluence of that river and the Missouri. Its whole course is through a country nearly destitute of timber. The low plains which extend along its banks have a fertile soil; but the want of timber opposes a serious obstacle to their settlement.

The soil and climate here are so entirely similar to those of the country about Grand river and the Little Platte, already described, that no change in the vegetable productions could be expected. A species of onion, with a root about as large as an ounce ball, and bearing a conspicuous umbel of purple flowers, is very abundant about the streams, and furnished a valuable addition to our bill of fare.

Soon after crossing the Elk-horn we entered the valley of the Platte, which presented the view of an unvaried plain, from three to eight miles in width, and extending more that one hundred miles along that river, being a vast expanse of prairie, or natural meadow, without a hill or other inequality of surface, and with scarce a tree or a shrub to be seen upon it. The woodlands, occupying the islands in the Platte, bound it on one side; the river-hills, low and gently sloped, terminate it on the other.

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* In Father Venegas' account of California, published at Madrid in 1758, we find a description of a similar method of transportation, used by the natives of that country. "The inhabitants of the banks of the Colorado make of the same herbs (a vine called Pita,) little tubs or bins, called Coritas, which generally hold about two bushels of maize; and in these they transport their goods from one shore to the other, without being in the least damaged by the water, they themselves swimming behind and shoving these vehicles along before them." Vol. I. p. 44. London, 1759.

At about 3 o'clock P. M. a party of ten Indians were seen crossing the plain, towards the Platte, at a great distance before us. Soon after we arrived at a small creek, where was some scattered timber: here we determined to halt for the night, being informed by our guide that we would meet with no wood for twenty miles beyond.

As Indians had been seen in the afternoon, and we were aware of their being still in our neighbourhood, it was thought proper to stake the horses as near as possible to the camp, and to station two sentinels, who were to be relieved during the night.

In our encampment we observed the following order. The three tents were pitched in a right line, all fronting in the same direction. In advance of these, at the distance of four feet, our baggage was arranged in six heaps one at the right, and one at the left of the entrance to each tent, and protected from the weather by bear-skins, thrown over them. This disposition was made, not only for the convenience of the party, but that our baggage, in case of an attack of the Indians, might serve as a kind of breastwork, behind which we might be, in some measure, sheltered from danger. At any rate, having our baggage thus arranged, we should know where to find it, and where to rally, in any emergency by day or night.

On the ensuing morning, (8th,) we continued our journey along the north side of the valley of the Platte, at the distance of four or five miles from the river, the direction of our course South, 85° West, which we followed near twenty miles.

In all our marches we observed the following order. Capt. Bell, mounted on a horse whose gate was regular and uniform, and well calculated for the estimation of distances, preceded the party, attended by our guide.—The soldiers and attendants, formed into two squads, for the better management of the pack horses, followed in single file.—The scientific gentlemen occupied any part of the line that best suited their convenience.—Major Long followed in the rear, for the purpose of superintending the re-adjustment of deranged packs, and urging any disposed to linger, to the observance of a close order of march; a duty attended with no inconsiderable trouble and perplexity.

Though our route lay at the distance of several miles from the Platte, we could distinctly see the narrow and interrupted line of timber which grows along its course, and, occasionally, we had a transient view of the river itself, spreading like an expansive lake, and embosoming innumerable islands. About eighteen miles from our encampment, our course led us into the valley of a small river, called La petite Coquille or Muscleshell creek, which we ascended six miles, not deviating from the course we had taken. In the middle of the day we encountered a violent thunder-storm without dismounting from our horses. The plain about us, for a great distance, was destitute of timber, and so level that our party formed the most prominent object in an extent of several miles. It is not surprising that, in this situation, we were a little startled at seeing the lightning strike upon the ground, at the distance of two hundred yards from us. We could not have been deceived, in relation to this appearance, as we distinctly saw the water and mud thrown several feet into the air by the shock. The storm was so violent that, notwithstanding all our care, we could not prevent our baggage from being wet. We crossed the Coquille six miles above the place where it enters the valley of the Platte. This we effected with some difficulty, the banks being steep and muddy, and immediately afterwards encamped to dry our baggage.

The Coquille is about eighty yards across; its bed muddy, and the current moderate. Its course is circuitous, traversing some inconsiderable tracts of fertile and well wooded bottom land: in one of these our camp was placed. The night was warm and the mosquitoes swarming in inconceivable multitudes.

Our baggage had been wet on the preceding day, and again by a heavy shower in the night: as the morning was cloudy, we remained in camp for some time, and attempted to dry our clothes and blankets by a large fire. After breakfasting we again got upon our horses, and, travelling nearly southwest, arrived in the afternoon at the valley of the Wolf river, or Loup fork of the Platte. This river is called by the Indians the Little Missouri, on account of its resemblance, in the velocity of its current, the turbidness of its waters, and other respects, to that river.

Its sources are in the country of the Poncaras, opposite those of the Quicurre.* Like the Platte, its immediate valley is a broad and woodless plain, almost without any perceptible unevenness of surface, and bounded on each side by parallel ranges of low and barren hills.

During our ride, as we were approaching the Loup fork, we met two Pawnee Indians, handsomely mounted, and, as they informed us, on their way to dance the calumet dance with the Omawhaws. We gave them a small quantity of tobacco, and they departed, appearing highly pleased. In the fertile grounds, along the valley of the Loup fork, we observed several plants which we had not before seen; among these was one belonging to the family of the *Malvaceæ*, with a large tuberous root which is soft and edible, being by no means ungrateful to the taste.* We observed also the downy spike of the rabbit's-foot plantain (Plantago *Lagopus*, Ph.) intermixed with the short grasses of the prairie. The long flowered Puccoon, (Batschia *longiflora*, N.) a larger and more beautiful plant than the B. *canescens* is here frequent. As we proceed westward, some changes are observed in the character of the soil and the aspect of vegetation. The Larkspurs and Lichnedias, (species of Phlox and Delphinium,) so common and beautiful in all the country between St. Louis and Council Bluff, are succeeded by several species of Milk vetch,† some Vicias, and the superb Sweet pea (Lathyrus *polymorphus*). Every step of our progress to the west brought us upon a less fertile soil. We had as yet seen no game except a few antelopes, too wild and watchful to be taken without much trouble. In the low prairies we saw several curlews and marbled godwits, with their young; Bartram's sand-piper was also very frequent.

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* See Lewis and Clark vol. 1. p. 67. Phil.

A little before sun-set we crossed Grape creek, a small and rapid stream of clear water, and soon after arrived at the Loup fork, where we encamped. The banks of this river are of a fine white sand, and are elevated no more than about eight feet above the surface of the stream, at a time of low water. It does not however appear that the low plains, contiguous to the Loup fork, are at any season inundated, the channel being sufficiently wide, and the current rapid enough to discharge all the water, which may at any time be brought down from above.

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* This plant is destitute of the exterior calix of the genus Malva, to which however, it is more closely allied than to Sida, into which it would appear to fall by its artificial characters. It appears to be a congener to the two new plants lately brought by Mr. Nuttall from Arkansa, and which have received the name of *Nuttallia*.

† Astragalus carnosus, N. A. *Missouriensis*, N. A. *Lotiflorus*, Ph.

Gaura coccinea, N. Troximon marginatum, Ph. Hymenopappus *tenuifolius*, Ph. Trichodium *laxiflorum*, Mx. Atheropogon *oligostachyum*, N. Viola *palmata*, Ph? in fruit. Hedeoma *hirta*, N. Hordeum *jubatum*, Anemone *tenella*, Ph. and other plants were among our collections of this day.

In the evening, and on the following morning, observations were taken to ascertain the magnetic variation, which was found to be 13½° east.

On the morning of the 10th, we crossed Beaver creek, six miles southwest of our encampment. Here we were compelled to carry across our baggage by hand, the creek being too deep and muddy to admit risking it on the pack-horses.

In fording this difficult stream, we had the misfortune to lose an important part of the lock of an air-gun, and as there were no means of replacing the lost article, it was determined to send back the gun, from the Pawnee villages by one of the traders, who was soon to return to the Missouri.

While we were encamped at this spot, being detained by a heavy shower, three Frenchmen, and two Indians, arrived at the ford, on their way to the Pawnee villages. They told us they had eaten nothing since they left the Missouri. One of the Frenchmen brought a letter from lieutenant Graham, and a box containing a quantity of vaccine virus, transmitted to the exploring party, for the purpose of introducing vaccination among the Indians. The box alluded to, had been sent to the war department, by Mr. Sylvanus Fancher, a gentleman in Connecticut, and forwarded to the commanding officer of the expedition. It contained a considerable quantity of virus, carefully enclosed in a variety of packing apparatus, together with instructions relative to the disposition and application of it. But as it was not transmitted till after the departure of the expedition, from Pittsburgh, it had been forwarded by mail to St. Louis, whence it was conveyed up the Missouri, by a gentleman of the military expedition, under Colonel Atkinson. Unfortunately, the keel-boat, on board of which it had been deposited, was wrecked in ascending the river, and the box and its contents, although saved from the wreck, was thoroughly drenched, and the virus completely ruined. It was received three or four weeks after the catastrophe just mentioned, and was still drenched with water.

The Frenchmen, had, on their way, caught a horse, belonging to Mr. J. Dougherty, and intended for the use of his brother, who was of our party. He had escaped several weeks previous, from Engineer Cantonment, and since that time had been wandering in the prairies. This formed a valuable addition to our stock of horses, as a number of them were already unfit for service, on account of sore backs.

The Frenchmen and Indians were supplied with provisions from our packs, and proceeded immediately on their way, intending to reach the Pawnee villages the same evening.

At a late hour in the afternoon we resumed our journey, and at the distance of four miles from Beaver creek, crossed the creek of Souls, a small and muddy stream, in which two of the pack-horses fell, again wetting our baggage.

At sunset we arrived at a small creek, eleven miles distant from the village of the Grand Pawnees, where we encamped.

On the following morning, having arranged the party according to rank, and given the necessary instructions for the preservation of order, we proceeded forward and in a short time came in sight of the first of the Pawnee villages. The trace on which we had travelled since we left the Missouri, had the appearance of being more and more frequented as we approached the Pawnee towns; and here, instead of a single footway, it consisted of more than twenty parallel paths, of similar size and appearance. At a few miles distance from the village, we met a party of eight or ten squaws with hoes and other instruments of agriculture, on their way to the corn plantations. They were accompanied by one young Indian, but in what capacity, whether as assistant, protector, or task master, we were not informed. After a ride of about three hours, we arrived before the village, and despatched a messenger to inform the chief of our approach.

Answer was returned that he was engaged with his chiefs and warriors at a medicine feast, and could not, therefore, come out to meet us. We were soon surrounded by a crowd of women and children, who gazed at us with some expressions of astonishment, but as no one appeared to welcome us to the village, arrangements were made for sending on the horses and baggage to a suitable place for encampment, while Major Long, with several gentlemen, who wished to accompany him, entered the village.

The party which accompanied Major Long, after groping about some time, and traversing a considerable part of the village, arrived at the lodge of the principal chief. Here we were again informed that *Tarrarecawaho*, with all the principal men of the village, were engaged at a medicine feast.

Notwithstanding his absence, some mats were spread for us upon the ground, in the back part of the lodge. Upon these we sat down, and after waiting some time, were presented with a large wooden dish of hominy, or boiled maize. In this was a single spoon of the horn of a bison, large enough to hold half a pint, which, being used alternately by each of the party, soon emptied the dish of its contents.

The interior of this capacious dwelling was dimly lighted from a hole at the top, through which the sun's rays, in a defined column, fell aslant upon the earthen floor. Immediately under this hole, which is both window and chimney, is a small depression in the centre of the floor, where the fire is made; but the upper parts of the lodge are constantly filled with smoke; adding much to the air of gloominess and obscurity, which prevail within. The furniture of Long-hair's lodge consisted of mats, ingeniously woven of grass or rushes, bison robes, wooden dishes, and one or two small brass kettles. In the part of the lodge immediately opposite the entrance, we observed a rude niche in the wall, which was occupied by a bison skull. It appeared to have been exposed to the weather, until the flesh and periosteum had decayed, and the bones had become white.

In this lodge we saw a number of squaws of different ages, but all as we supposed the wives of Long-hair. This chief, who is somewhat of a Turk in his domestic establishment, has eleven wives, nine of whom are quiet occupants of the same lodge. He has but ten children.

Our visit to this village seemed to excite no great degree of attention. Among the crowd, who surrounded us before we entered the village, we observed several young squaws rather gaily dressed, being wrapped in clean and new blankets, and having their heads ornamented with wreaths of gnaphalium and the silvery leaves of the psoralea canescens. On the tops of the lodges we also saw some display of finery, which we supposed to have been made on account of our visit. Flags were hoisted, shields, and bows, and quivers, were suspended in conspicuous places, scalps were hung out; in short, the people appeared to have exposed whatever they possessed, in the exhibition of which, they could find any gratification of their vanity. Aside from these, we received no distinguished marks of attention from the Grand Pawnees.

After spending an hour or two at their village, we retired to our camp about a mile distant. Here we were shortly afterwards visited by Long-hair, the Malicious chief, and several others. They had with them a young Spaniard, who interpreted Pawnee and French, by whose means we were able to communicate freely with them. They offered some apology, for not receiving us at their village, saying, they could not have left their medicine feast, if the village had been on fire. We caused our intended route to be explained to them, with the objects we had in view, in undertaking so long a journey. To this they answered, that our undertaking was attended with great difficulty and danger, that the country about the head of the Platte, was filled with bands of powerful and ferocious Indians, who would lose no opportunity to attack and injure us, that in some parts of our route, we must suffer from want of water, in others there was no game. In short, said the Grand chief, "you must have long hearts, to undertake such a journey with so weak a force; hearts that would reach from the earth to the heavens." These representations would, it is probable, have had some effect upon our spirits, had we not supposed, they were made entirely for that purpose. The Pawnees undoubtedly hoped to alarm our fears to such a degree, that we should be induced to relinquish our proposed journey; their design being to deter us from passing through their hunting grounds, and perhaps hoping by these means to possess themselves of a larger share of the articles, we had provided for Indian presents.

Finding our determination was not to be shaken, they advised us to ascend the Loup Fork, instead of taking the route by the Platte, which we had mentioned. This advice, and the statement by which it was accompanied, that there were no bisons on the Platte, we suspected of originating from the same motive, which had induced them to make the representation above mentioned; it was not, therefore, allowed in any manner to influence our determination.

After collecting from them what information we could obtain, relative to the country to the west, we endeavoured to dismiss them with some presents. They were not, however, easily to be satisfied—they importuned us for tobacco, and other articles, which the limited nature of our supplies would not allow us to give, as we expected soon to meet with Indians, whose good will it would be more important for us to purchase.

Our camp was something more than a mile from the village. The intervening space, as well as the plain for a great extent on all sides, was covered with great numbers of horses, intermixed with men, women, and children. The men having no serious business, pass much of their time in the open air, either on horseback, or engaged at some game of hazard.

The Pawnees are expert horsemen, and delight in the exhibition of feats of skill and adroitness. Many of their horses are branded, but this is the case with such only as are taken in their predatory excursions against the Spaniards of New Mexico, or the south-western Indians; the branded horses all come originally from the Spaniards. It does not appear, that the Indians have any method of affixing distinctive marks to their animals. Each Indian has usually but a very limited number of horses, which are as well known, and as universally acknowledged to be his, as the children or other members of his family. Some of the finest horses which we observed, were ornamented with gaudy trappings, and furniture of Spanish manufacture.

We spent some time in attempting to explain to the chiefs, the nature and effects of the vaccine disease, and in endeavouring to persuade them to influence some of their people to submit to inoculation; but in this we were unsuccessful. It is now several years, since the ravages of the small pox have been experienced among them, and it is probable they feel an undue degree of security against its future visitations. We were, however, by no means confident, that they comprehended what we said on the subject of vaccination, if they did it is not probable their confidence in us was sufficient to induce them to receive it as truth. All we were able to effect, was to persuade the young Spanish interpreter, to allow us to make use of his arm, to shew the Indians that the proposed operation was by no means a formidable one. With the same intention, the operation was performed upon Major Long's arm, and that of Mr. H. Dougherty.

We were not very solicitious to make the experiment among them, our virus, as before remarked, being unfit for use. We were accordingly afraid of impairing their confidence in the remedy.

In the plain about the village, we noticed several little groups of squaws, busily engaged in dressing the skins of the bison for robes. When the processes of tanning and dressing are completed, and the inner surface of the skin dry, figures are traced upon it with vermillion, and other showy colours.

These are designed as ornaments, but are sometimes a record of important facts. The story of a battle is often depicted in this way, and the robe of a warrior is frequently decorated with the narration in pictures, of some of his exploits.

During the afternoon our camp was somewhat thronged by the Indians, offering to trade horses, and squaws proposing barters, but at night they withdrew towards their village, and all remained quiet.

As the day began to dawn on the following morning, numerous parties of squaws, accompanied by their dogs, were seen on their way from the village to the corn patches, scattered at the distance of several miles.

At sunrise we mounted our horses, and arranging ourselves as on the preceding day, and carrying a white silk flag with a painted design, emblematic of peaceable intentions in the front, and the United States' flag in the centre of our party, we moved forward towards the second village, distant about three miles from our camp.

The bands which inhabit this village, are called Republican Pawnees. This name, it is said, has been applied to this band, in consequence of their having seceded from the parent stock or Grand Pawnees, some years since, and established themselves under a separate government.

They resided formerly on the Republican Fork of the Konzas river, to which they have given their name; whence they removed a few years since to their present situation, that they might enjoy the protection of their more powerful allies, the Grand Pawnees. Their village is distant four miles from that of the Grand Pawnees, and like it on the immediate bank of the river. *Fool Robe* their chief, received us with a little more attention than we had met on the preceding day, shaking us each by the hand. He afterwards conducted us to his lodge, within the village, but excused himself from feasting us, saying, his squaws were all absent at the cornfields.

It was a war party from this band, which had plundered the detachment from the steam boat, on the preceding summer near the Konza village. For this outrage they had been compelled by the prompt and vigorous interference of Major O'Fallon, the Indian agent, to make ample restitution. Whether it was, that Fool Robe and his warriors were yet a little sure on account of this affair, or for some other reason, it was evident, we were not welcome visitants. We had hitherto entertained exalted ideas, of the hospitality of the Pawnees, in their manner of receiving strangers, and were consequently a little disappointed at the reception we had met. We stayed but a short time with Fool Robe. Having briefly described to him the outline of our intended journey, and listened to his remarks and advice respecting it, we remounted our horses, and proceeded towards the Loup village.

On our way we were met by the Knife-chief, who, having heard of our intention to visit him, came out on horse-back, and met us more than a mile from the village. He gave us a very cordial and friendly reception, frequently rubbing his breast in token of the satisfaction he felt at seeing us. His frank and intelligent countenance, and his impressive gestures made him easily understood, without the aid of an interpreter. As our cavalcade passed by him, he appeared to examine with some attention, the physiognomy and appointments of the individuals composing it, but when his rapid eye alighted upon Julien, with whom he could use much freedom, he rode up to him and eagerly inquired by means of signs (v. Nos. 27, and 14, in the Appendix), if we had brought with us any whiskey, which, we were grieved to learn, by this intimation, that he was acquainted with, and would indulge in; Julien replied in the negative, by the exhibition of the proper sign, (No. 65,) with which he did not betray any dissatisfaction, although it was evident from his subsequent conversation, that he believed it to be false. On the way to the village, he pointed out a convenient place for us to dispose of our horses and establish our camp. Here we dismounted, leaving our horses in the care of the guard, and followed the chief to his lodge. Soon after our arrival, a large dish was placed before us, according to the custom of the Indians, filled with boiled sweet corn. While we were eating, the Knife-chief with the principal men of his nation, were sitting silently behind us. Having finished our repast, we gave the Indians an account of ourselves, the occasion of our visit to them, our intended journey to the mountains at the head of the Platte, &c., as in the other villages. To all this the Knife-chief listened with great attention. He expressed himself satisfied with the account we had given of the objects of our enterprize, but feared we should be ill-treated by the savages we should meet. "Your heart must be strong," said he, "to go upon so hazardous a journey. May the Master of Life be your protector." The same benediction had been given us by the chiefs of the Republican and Grand Pawnees, probably with nearly the same degree of ingenuousness and sincerity. The Pawnees are at war with the Arrapahoes, Kaskaias, and other erratic bands, who wander about the sources of the Platte and Arkansa. Their war parties are often sent out in that direction, where they sometimes meet a spirited reception from their enemies. It may be on this account, that the Pawnees connect the idea of imminent danger, to an excursion into those parts of the country which we proposed to visit. It is, however, highly probable, their unwillingness to have us pass through their hunting grounds, was the most productive cause of all the anxiety, and all the fears they expressed on our account.

The chief addressed us for some time with great apparent earnestness, but his discourse as it came to our comprehension, by the aid of an interpreter, whom we obtained at this village, seemed directed solely to one object, the exciting our compassion for his poverty.

"Father—You see me here; I am very poor; my young men are very poor; we hope our great Father, will not forget the red-skins his children, they are poor," with a great deal more in the same strain. He, however, returned frequently to the subject of our journey to the west. "I will tell my young men," said he, (meaning the war parties which should be sent out in that direction,) "when they meet you, to take you by the hand, and smoke the peace pipe with you."

The Knife-chief, with his son Petalesharoo, celebrated for his filial affection, his valour and his humanity, visited us at our camp in the afternoon, and we were proud to entertain one whom we thought so worthy of our admiration. We also received a visit from a *Medicine-man*, who, having heard there were great medicine-men belonging to our party, requested to be shown some of the mysteries of their profession. We accordingly displayed before him a pair of bullet-forceps, a small case of sugeons' instruments, and some similar articles, and began to explain to him the use of each. He attended for some time to our discourse, but apparently without comprehending any part of it, and at length turned abruptly away, with an air of dissatisfaction and contempt.

The Canadian, who had been engaged before we left the Missouri as a guide, now gave us to understand, that it was not his intention to accompany the expedition. Having been informed of other persons in the village, who were qualified for this undertaking, Major Long made application to several of these, who at first expressed a willingness to accompany him, but soon afterwards recalled their promises. Finding them disposed to trifle, in this manner, he at length assured them that unless some one was immediately procured to attend the expedition, as guide, their refusal, and the breach of engagement on the part of Bijeau, should be made known to the agent, and the whole corps of Canadian traders be deprived of the privilege of residing, or trading among the Pawnees. This representation had the desired effect. A ludicrous degree of consternation and alarm was depicted upon the faces of all the traders, and they immediately made a common concern of a subject which before they had treated with very little attention. Two were immediately selected from their number, and were in a short time ready to attend us. It is probable almost any other method of punishment would have appeared to them less terrible. Having been long resident among the Indians, they have conformed to their mode of life, which certainly is not without its charms to the uninformed and the idle. A tie not less powerful is that of conjugal and paternal affection, they having among the Indians wives and children relying upon their exertions for protection and maintenance.

About the village we saw several parties of youg men eagerly engaged at games of hazard. One of these, which we noticed particularly, is played between two persons, and something is staked on the event of each game. The instruments used are a small hoop, about six inches in diameter, which is usually wound with thongs of leather, and a pole five or six feet long, on the larger end of which a limb is left to project about six inches. The whole bears some resemblance to a shepherd's crook. The game is played upon a smooth beaten path, at one end of which the gamester commences, and running at full speed, he first rolls from him the hoop, then discharges after it the pole, which slides along the path pursuing the hoop until both stop together, at the distance of about thirty yards from the place whence they were thrown. After throwing them from him the gamester continues his pace, and the Indian, the hoop, and the pole arrive at the end of the path about the same time. The effort appears to be to place the end of the pole either in the ring, or as near as possible, and we could perceive that those casts were considered best when the ring was caught by the hook at the end of the pole. What constitutes a point, or how many points are reckoned to the game, we could not ascertain. It is, however, sufficiently evident that they are desperate gamesters, often losing their ornaments, articles of dress, &c. at play.

This game, like some of those described in a former part of this work, requires considerable exertion, and is well calculated for the exhibition of that gracefulness of figure, and that ease and celerity of motion in which the savages so far surpass their civilized neighbours. We saw many young men engaged at these diversions, who had thrown aside their robes, leggins, and all superfluous articles of dress, displaying a symmetry of proportion, and beauty of form, which we have rarely seen surpassed. They were so intent upon their diversion that in some instances our approach towards them, as we were rambling about the village, did not for a moment call off their attention from the game.

The population of the three Pawnee villages was estimated by Capt. Pike, in 1806, at 6,223, and they were at that time supposed to be able to call into the field 1,993 warriors. At present it is believed they would fall short of this estimate, particularly in the number of warriors. They are, however, still numerous, and are said to be increasing, and are respected by the Sioux, and other neighbouring nations, as warlike and powerful.

About the three villages are six or eight thousand horses, feeding in the plains during the day, but confined at night. These, with a breed of sharp-eared, meagre, wolf-like dogs, are their only domestic animals. On the approach of winter they conceal their stores of corn, dry pumpkins, beans, &c. and with their whole retinue of dogs and horses desert their villages. This they are compelled to do from the want of wood, not only for fuel, but for the support of their numerous horses.

They encamp in their lodges of skins wherever the cotton wood is found in sufficient quantities for their horses, and game for themselves. The horses, in the country bordering the Missouri, are fed, during the winter, in the extensive wooded bottoms of that river, and are not, therefore, confined exclusively to the cotton wood, having access to other timber, also to the rushes and coarse grass which abound in the bottoms. We are, however, well assured that the Indian horses, farther to the west, about the upper branches of the Platte, and Arkansa, subsist, and thrive, during the winter, with no other article of food than the bark and branches of the cotton wood. The winter at the Pawnee villages is said to be uncommonly severe, but is probably little, if any more so, than at Council Bluff, on the Missouri. Thermometric observations at Council Bluff, and at St. Peters on the Mississippi, prove that the climate at these two places does not very widely differ from that of the corresponding latitudes on the Atlantic coast, except that it is at times something colder. The vicissitudes of temperature appear to be equally great and sudden.

The climate at Council Bluff is beyond the influence of the south-western winds from the Gulf of Mexico, which have been supposed to have so perceptible an effect to soften the rigors of winter in the valley of the lower Mississippi. The three Pawnee villages, with their pasture grounds, and insignificant enclosures, occupy about ten miles in length of the fertile valley of the Wolf river. The surface is wholly naked of timber, rising gradually to the river hills, which are broad and low, and from a mile to a mile and an half distant. The soil of this valley is deep and of inexhaustible fertility. The surface, to the depth of two or three feet, is a dark coloured vegetable mould intermixed with argillaceous loam, and still deeper, with a fine siliceous sand. The agriculture of the Pawnees is extremely rude. They are supplied with a few hoes by the traders, but many of their labors are accomplished with the rude instruments of wood and bone which their own ingenuity supplies. They plant corn and pumpkins in little patches along the sides of deep ravines, and wherever by any accident the grassy turf has been eradicated. Sometimes these little plantations are enclosed with a sort of wicker fence, and in other instances are left entirely open. These last are probably watched by the squaws during the day time, when the horses run at large.

We slept on the night of the 12th at our encampment in front of the Pawnee Loup village. During the night all remained at rest except the dogs, who howled in concert, in the same voice, and nearly to the same tune, as the wolves, to whose nightly serenade we were now accustomed.

As soon as the day dawned we observed the surrounding plain filled with groups of squaws, with their small children, trooping to their cornfields in every direction. Some, who passed our encampment, lingered a moment to admire our novel appearance; but the air of serious business was manifest in their countenances, and they soon hurried away to their daily labors. Some of the groups of young females were accompanied by a jolly looking young man as a protector. Their corn is usually gathered before it is entirely ripe, it is then boiled, cut from the cob, and dried. Their cookery consists in boiling it, either with or without the tallow of the bison, according to the state of their supplies. The pumpkins are cut in slips, which are dried in the sun, and afterwards woven into mats for the convenience of carrying. They offered us these articles in exchange for tobacco, vermillion, beads, looking glasses, and various other trinkets. Also jerked bison beef, and the tallow of that animal, of which we purchased a small quantity. We saw among them the

Pomme blanche, so called by the Canadian traders and boatmen, which is the root of the Psoralea *esculenta*. It is eaten either boiled or roasted, and somewhat resembles the sweet potatoe.

At ten o'clock, on the morning of the 13th, we commenced crossing the river, opposite the village. This we found an undertaking of some difficulty, as the current was rapid, and the bottom partook something of the nature of quicksands. Major Long, Mr. Say, and one or two others, who were riding at the head of our line, had nearly crossed, and were wading their horses about mid-sides deep in the water, when they were suddenly thrown from their saddles by the sinking of their horses feet in the sand; the horses, however, extricated themselves by their own exertion; and those of the party who had experienced this unexpected immersion, were greeted, upon their standing up in the water, by the shouts and acclamations of the Pawnees who lined the shore we had left. Major Long's gun and jacob-staff, as well as Mr. Say's gun, blanket, and other articles, were dropped into the river; all of these were, however, recovered except the blanket; and Mr. Say, having lost the greater part of his furniture at the river of Souls, by the ill-timed activity of his horse, was now, in a great measure, unencumbered with baggage. At length, by leading our horses, we arrived in safety on the opposite shore, where we encamped, intending to make some further barters with the Pawnees, and to dry some of our baggage, guns, &c. which had been wet in crossing.

The sand of this river, which in the aggregate has a very white appearance, consists principally of minute grains of transparent quartz, mixed with some which are red, yellow, and variously coloured. The shore, opposite the Loup village, is covered with shrubs and other plants, growing among the loose sands. One of the most common is a large flowering rose, rising to about three feet high, and diffusing a most grateful fragrance. The Symphoria *glomerata*, common in all the country west of the Mississippi thus far, is also a beautiful shrub very frequent at this place; the flowers are white, with a faint and delicate tinge of red, having the inside of the corrolla densely villous, like the Mitchilla, to which plant it is manifestly allied. On the hills, at a little distance from the river, we observed the Cactus fragilis. This plant, which was first detected on the Missouri by Lewis and Clark, has been accurately described by Mr. Nuttall. The articulations or joints of which it consists, are small, oblong, and tapering, but separate from each other with great readiness, and adhere by means of the barbed spines, with which they are thickly set, to whatever they may happen to touch. This has led to a saying among the hunters, that the plant grows without roots.

In the afternoon a young Indian belonging to the Arikara nation on the Missouri, but who resided among the Pawnees, stopped at our camp, on his return from a solitary excursion to the Arkansa. He had brought with him, from one of the upper branches of that river, two masses of salt, each weighing about thirty pounds. This salt is pure and perfect, consisting of large crystalline grains, so concreted together as to form a mass about twenty inches in diameter and six in thickness. It had evidently been formed by the evaporation of water in some pond or basin, and that surface of the mass, which was its lower in its original position, was intermixed with red sand, indicating the sort of soil in which it is found. Mr. Peale procured some specimens in exchange for tobacco.

This Indian had been many days absent, on his excursion, and as he sat upon his horse before our encampment we had an opportunity to note a trait in the Indian character, which has been the subject of remark by many authors, and which we had previously observed in several instances ourselves; we allude to the apparent coolness which friends, and the nearest relatives, observe to each other when they meet after a long separation. Several of his fellow townsmen, who were about our encampment, hardly noticed him when he first appeared, and it was only after the lapse of a considerable interval that one of them spoke to him, but without any visible ceremony of greeting.

On the morning of the 14th, we left our encampment, opposite the village of the Pawnee Loups, and proceeded on our journey, taking the most direct course towards the Platte. Our party had here received an addition of two men, one named Bijeau, engaged as guide and interpreter, the other, Ledoux, to serve as hunter, farrier, &c. Both were Frenchmen, residing permanently among the Pawnees, and had been repeatedly on the head waters of the Platte and Arkansa, for the purpose of hunting and trapping beaver. Bijeau was partially acquainted with several Indian languages; in particular, that of the Crow nation, which is extensively understood by the western tribes, and, by frequent intercourse with the savages he had gained a complete knowledge of the language of signs, universally current among them. The great number, and the wide dissimilarity of the dialects of the aborigines render this method of communication necessary to them, and it is not surprising it should have arrived at considerable perfection among tribes who, from their situation and manner of life, must often find occasion to make use of it.

Besides these two men a young Spaniard, a refugee from some of the settlements of New Mexico, joined our party, intending to accompany us as far as his fear of his own countrymen would permit. He had probably been guilty of some misdemeanor, which made it necessary to avoid his former acquaintances, and, on this account, he could not be induced to accompany us into the neighbourhood of the Spanish settlements. The *Frenchmen* brought with them three horses and a mule, so that our party, which was now supposed to be made up for the journey, consisted, exclusive of the Spaniard, of twenty-two men, thirty-four horses and mules, and two dogs.

We were well armed and equipped, each man carrying a yauger or rifle gun, with the exception of two or three who had muskets; most of us had pistols, all tomahawks and long knives, which we carried suspended at our belts. We believed ourselves about to enter on a district of country inhabited by lawless and predatory bands of savages, where we should have occasion to make use, not only of our arms, but of whatever share of courage and hardihood we might chance to possess.

The country which we passed on the 14th, lying between the Loup fork and the Platte, has an undulating surface, except that portion of it which comprises the bottom lands of the two rivers. The ridges are of little elevation, destitute of stone of any kind, and irregular in direction; the soil is sandy and infertile. The high and barren parts of this tract are occupied by numerous communities of the Prairie dog or Louisiana marmot.*

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* *Arctomys Ludoviciana, Ord.* This interesting and sprightly little animal has received the absurd and inappropriate name of Prairie dog, from a fancied resemblance of its warning cry to the hurried barking of a small dog. This sound may be imitated with the human voice, by the pronunciation of the syllable chek, chek, chek, in a sibilated manner, and in rapid succession, by propelling the breath between the tip of the tongue and the roof of the mouth. The animal is of a light dirty reddish-brown colour above, which is intermixed with some gray, also a few black hairs. This coating of hair is of a dark lead colour next the skin, then bluish-white, then light reddish, then gray at the tip. The lower parts of the body are of a dirty white colour. The head is wide and depressed above, with large eyes; the iris is dark brown. The ears are short and truncated; the whiskers of moderate length and black; a few bristles project from the anterior portion of the superior orbit of the eye, and a few also from a wart on the cheek: the nose is somewhat sharp and compressed; the hair of the anterior legs, and that of the throat and neck, is not dusky at base. All the feet are five-toed, covered with very short hair, and armed with rather long black nails: the exterior one of the fore feet nearly attains the base of the next, and the middle one is half an inch in length: the thumb is armed with a conic nail, three tenths of an inch in

On arriving near the Platte we observed a species of prickly pear (*Cactus ferox. N.*) to become very numerous. It resembles the common prickly pear of New Jersey, (*C. opuntia.*) but is larger, and protected by a more formidable armature of thorns. Our Indian horses were so well acquainted with this plant, and its properties, that they used the utmost care to avoid stepping near it. The flowers are of a sulphur yellow, and when fully expanded are nearly as large as those of the garden peony, and crowded together upon the summits of the terminal articulations of which the plant consists. These articulations, (or segments contained

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length: the tail is rather short, banded with brown near the tip, and the hair, excepting near the body, is not plumbeous at base.*

The length of the animal, from the tip of the nose to the origin of the tail, is sixteen inches; of the tail, two inches and three fourths; of the hair at its tip three fourths of an inch.

As particular districts, of limited extent, are, in general, occupied by the burrows of these animals, such assemblages of dwellings are denominated *Prairie dog villages* by hunters and others who wander in these remote regions.

These villages, like those of man, differ widely in the extent of surface which they occupy; some are confined to an area of a few acres, others are bounded by a circumference of many miles. Only one of these villages occurred between the Missouri and the Pawnee towns; thence to the Platte they were much more numerous.

The entrance to the burrow is at the summit of the little mound of earth brought up by the animal during the progress of the excavation below.

These mounds are sometimes inconspicuous, but generally somewhat elevated above the common surface, though rarely to the height of eighteen inches. Their form is that of a truncated cone, on a base of two or three feet, perforated by a comparitively large hole or entrance at the summit or in the side. The whole surface, but more particularly the summit, is trodden down and compacted, like a well worn pathway. The hole descends vertically to the depth of one or two feet, whence it continues in an oblique direction downward.

A single burrow may have many occupants. We have seen as many as seven or eight individuals sitting upon one mound.

They delight to sport about the entrance of their burrows in pleasant weather. At the approach of danger they retreat to their dens, or when its proximity is not too immediate they remain, barking, and flourishing their tails, on the edge of their holes, or sitting erect to reconnoitre. When fired upon in this situation, they never fail to escape, or if killed instantly to fall into their burrows, where they are beyond the reach of the hunter.

As they pass the winter in a lethargic sleep, they lay up no provision

* This description is drawn chiefly from a well prepared specimen belonging to the Philadelphia museum, the tail of which, if we may decide from memory, is somewhat too short.

between the joints) are oblong and flattened, being larger and thicker than a man's hand. A second species, the *C. mamillaris N.* occurs on the dry sandy ridges between the Pawnee villages and the Platte. The beautiful cristaria *coccinnea. Ph.* (malva *coccinnea. N.*) is very frequent in the low plains along the Platte. Its flowers have nearly the aspect of those of the common wild rose, except that they are more deeply coloured.

We arrived at the Platte a little before sun-set, the distance from the Pawnees being, according to our computation, twenty-five miles. After entering the valley of the river we travelled several miles across an unvaried plain, and at length passing down by a gradual descent of a few feet, we came upon a second level tract, extending to the river.

The soil of the first of these portions is a bed of sand, intermixed with small water-worn pebbles and gravel, that of the latter is more fertile, and produces a luxuriant vegetation.

Our guide informed us that the Platte, opposite the point where we entered its valley, contains an island which is more than one day's journey across, and about thirty miles in length.

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of food for that season, but defend themselves from its rigors by accurately closing up the entrance of the burrow. The further arrangements which the Prairia dog makes for its comfort and security are well worthy of attention. He constructs for himself a very neat globular cell with fine dry grass, having an aperture at top, large enough to admit the finger, and so compactly formed that it might almost be rolled over the floor without receiving injury.

The burrows are not always equidistant from each other, though they occur usually at intervals of about twenty feet.*

* In these villages, where the grass is fed close, and where much fresh earth is brought up and exposed to the air, is the peculiar habitat of a species of Solanum approaching the *S. triflorum* of Nuttall, which he says occurs as a weed "about the gardens of the Mandans and Minnetarees of the Missouri, and in no other situation." It appears to differ from the S. triflorum in being a little hirsute, with flat, runcinate pinnatifid leaves, and the peduncles alternating with the leaves. The Solanum *heterandrum* of Pursh, now referred to the new genus *Androcera* of Nuttall, is also very common, but is not confined, like the plant just mentioned, to the marmot villages. We collected also the Psoralea cuspidata, Ph. P. esculenta, N. *P.* lanata, N. also a species of Hieracium—H. runcinatum, Pistil hirsute, leaves all radical, eliptic-oblong runcinate; scape few-flowered, somewhat compound, and angular; glands on the hairs of the calix, very small and diaphanous; about one foot high; flower small. Hab. in depressed, grassy situations along the Platte.

At no great distance from our camp, which was placed immediately on the brink of the river, we found the body of a horse lying dead in the edge of the water. The animal had, in all probability, been recently lost by a war party of Indians.

15th. Soon after leaving our camp we crossed a small stream tributary to the Platte, from the north. It is called Great Wood river, and has some timber along its banks.

Our provisions being nearly exhausted two of the hunters were sent forward in search of game, but after some time they rejoined the party, having killed nothing.

Shortly afterwards a single bison was discovered some miles ahead of the party, and travelling apparently in the same direction. Four of our hunters, having disencumbered their horses of all their baggage, spurred forward in the pursuit, but none of them were able to overtake the animal, except the young Spaniard, who came near enough to wound it with an arrow; but his horse being exhausted he was compelled to desist from the pursuit, and suffer the bison to escape.

Having ascended the Platte about sixteen miles we halted to make such a dinner as the condition of our stores would allow, and here the Spaniard took his leave of us to return to the Pawnees.

In the scenery of the Platte there is the utmost uniformity; a broad plain, unvaried by any object on which the eye can rest, lies extended before us; on our right are the low and distant hills which bound the valley; and on our left the broad Platte, studded with numerous small, but verdant islands. On these islands is usually a little timber, which is not met with in other situations. We were fortunate in finding, towards evening, an old Indian encampment, where were poles, stakes, &c. which had been brought from the islands, and here we placed our camp. Some antelopes were seen during the day, but so wild and vigilant that all our efforts to take them proved unsuccessful. Our supper, therefore, was not of the choicest kind, and, what was infinitely more vexatious to us, was limited in quantity.

On the following day we passed a number of prairie dog villages, some of them extending from two to three miles along the river. Though much in want of game, most of our exertions to take these animals were without success. A number were killed, but we were able to possess ourselves of no more than two of them. These we found to be in good condition and well flavoured. Their flesh nearly resembles that of the ground hog, or woodchuck (Arctomys Marylandica.)

In some small ponds near the Platte we saw the common species of pond weed (Potamogeton *natans* and P. *fluitans*. Ph.) also the Utricularia longirostris of Leconte, and an interesting species of Myriophillum.*

By observations at morning and evening the magnetic variation was found thirteen and an half degrees east. In the middle of the day the heat was excessive, and we were under the necessity of halting at a place where no shade could be found to shelter us from the scorching rays of the sun, except what was afforded by our tents, which were set up for this purpose. Here we remained until 4 P. M. when we resumed our journey. We crossed towards evening a small creek, three miles beyond which we arrived at an old Indian camp where we halted for the night. We had not been long here before a tremendous storm of wind assailed our tents with such violence, that it was only by stationing ourselves outside, and holding the margin to the ground, that we were able to keep them standing.

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* Among other plants collected along the Platte on the 15th and 16th June are the Cheiranthus *asper. N.*, Helianthemum *canadense*, Atheropogon *apludoides. N.*, Myosotis *scorpioides*, Pentstemon *gracile. N*. The Cheiranthus *asper* is intensely bitter in every part, particularly the root, which is used as medicine by the Indians. In depressed and moist places along the river we observed a species of Plantago, which is manifestly allied to P. *eriophora* of Wallich, Flor. Ind. p. 423, also to P. *attenuata* of the same work, p. 425. The base of the scape and leaves is invested with a dense tuft of long, fine wool, of a rusty brown colour. Before the plant is taken up this tuft is concealed in the soil, being a little below the surface, but it adheres closely to the dried specimen. Its leaves, which are the size of those of P. *lanceolata*, are smooth, five nerved, with a few remote denticulations. Scape slender, exceeding the leaves; bracteas ovate, spike slender, few flowered—P. *attenuata*, Bradbury?

Two of the hunters who had been sent out during the afternoon, returned to camp late in the evening, bringing in a buck antelope, a highly acceptable acquisition to us, as we had been for some time restricted to short commons. The flesh we found palatable, being very similar in every respect to that of the common deer.

We had proceeded but a few miles from our camp, on the following morning, when we perceived a number of antelopes at a little distance in the prairie. Being on the windward side of the party they were not able, by their sense of smelling, to inform themselves of the nature of the danger which was approaching. One of them, "the patriarch of the flock," leaving his companions came so near our line as to be within the reach of a rifle ball, and was killed by Lieutenant Swift.

The antelope possesses an unconquerable inquisitiveness, of which the hunters often take advantage to compass the destruction of the animal. The attempt to approach immediately towards them in the open plain, where they are always found, rarely proves successful. Instead of this the hunter getting as near the animal as is practicable without exciting alarm, conceals himself by lying down, then fixing a handkerchief, or cap, upon the end of his ramrod continues to wave it, still remaining concealed. The animal after a long contest between curiosity and fear, at length approaches near enough to become a sacrifice to the former.*

In the afternoon a single bison was seen at the distance of several miles, being the second since we had left the Pawnee villages, which were now about a hundred miles distant, and we were beginning to fear that the representations of the Indians, in relation to the difficulty of procuring game to subsist so large a party as ours, would prove true. We found, however, that every part of the country, which we had recently passed, had, at no distant, period been occupied by innumerable herds of bisons. Their tracks, and dung, were still to be seen in vast numbers, and the surface of the ground was strewed with skulls, and skeletons, which were yet undecayed.

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* See Bradbury, p. 113.

At 4 o'clock P. M. we arrived at an old Indian encampment, opposite an island, on which was some wood, and perceiving that none would be met with for many miles ahead, we determined to halt here for the night.

The 18th, being Sunday, we remained in camp. This indulgence was not only highly acceptable to the soldiers and men who accompanied us, they being much harassed and fatigued by their exertions during the week, but was necessay for our horses, which not being in good condition when we left the Missouri, were perceptibly failing under the laborious services they were made to perform. At our nightly encampments we found it necessary to confine them, as we had not always a plentiful supply of grass in the immediate vicinity of our camp, and if left at large they would wander in search of better pasture, and occasion us great trouble to collect them again in the morning. Accordingly long ropes had been provided, which were carried constantly on the necks of the horses, and by these they were made fast during the night to stakes driven into the ground. After having eaten all the grass within his reach the horse was removed to another place, and this was done several times during the night, by a guard kept constantly on duty, both for the performance of this service, and also to give timely notice in case of the approach of Indians to the camp. Notwithstanding this care, on our part, our horses were sometimes but poorly fed, as we were often compelled to encamp in places where little grass was to be found. When we remained in camp during the day they were suffered to range more at liberty, a watch being kept out to prevent their wandering too great a distance. Notwithstanding the Sabbath was devoted to the refreshment of our horses, and the relaxation of the men who accompanied us, some attention was given to the great objects of the Expedition. Astronomical observations for the correction of our time-piece, and for other purposes, were made. At Engineer Cantonment we had furnished ourselves with port folios of paper to receive specimens of such plants as we might collect, but we found that the precautions which had been used to protect these from the weather had been insufficient, some of our collections being in part wet, and others having been made during the heavy rains which fell before we reached the Pawnee villages required much attention. The Sabbath also afforded us an opportunity to devote a little attention to the important objects of personal cleanliness and comfort. The plain about our encampment was strewed with the bones of the bison and other animals; and among the rest we distinguished some of men. We picked up a number of human skulls, one of which we thought it no sacrilege to compliment with a place upon one of our pack-horses. Our guides could give us no satisfactory information of the time and manner in which the several persons, to whom these bones formerly belonged, had been compelled to lay them down in this place; it is certain, however, that at no very distant period a battle had been fought, or a massacre committed, on this spot.

We had now arrived at a point about two hundred miles distant from the confluence of the Platte and Missouri, yet the character of the former river was but little changed. It was still from one to three miles in breadth, containing numerous islands, covered with a scanty growth of cotton wood willows, the Amorpha fruticosa, and other shrubs.

CHAPTER XVIII.

The Platte—Desert plains—Mirage—Arrival at the Rocky Mountains.

The Platte, called by the Otoes Ne-braska, (Flat river, or water,) is, as its name imports, almost uniformly broad and shoal. It is fordable at almost any place, except when swollen by freshets, which occur in the Spring season, from the melting of snow, and occasionally during the other portions of the year, from excessive rain. Its bed is composed almost exclusively of sand, forming innumerable bars, which are continually changing their position, and moving downward, till at length they are discharged into the Missouri, and swept away to the ocean by that rapid and turbulent river.

The range of the Platte, from extreme low to extreme high water is very inconsiderable, manifestly not exceeding six or eight feet. This is about the usual height of its banks above the surface of the sand which forms its bed. The banks are sometimes overflowed, but evidently to no great extent. The rapidity of the current, and the great width of the bed of the river, preclude the possibility of any extensive inundation of the surrounding country. The bottom lands of the river rise by an imperceptible ascent, on each side, extending laterally to a distance of from two to ten miles, where they are terminated by low ranges of gravelly hills, running parallel to the general direction of the river. Beyond these the surface is an undulating plain, having an elevation of from fifty to one hundred feet, and presenting the aspect of hopeless and irreclaimable sterility.

The Missouri in compliance with the usage of boat-men, hunters, &c., has been usually considered under two divisions, the lower extending from the Mississippi to the confluence of the Platte; and the upper, comprehending all above that point. As might be expected, the influx of so large and so peculiar a river as the Platte, gives a new character to the Missouri below. It is more rapid, more difficult of navigation, and the water more turbid than above.

Among other plants observed about our encampment, was the wild liquorice, (glycyrhiza *lepidota, N.)* which is believed to be the plant mentioned by Sir A. Mackenzie, which is used as food by the savages of the northwest. The root is large and long, spreading horizontally to a great distance. In taste it bears a very slight resemblance to the liquorice of the shops, but is bitter and nauseous. The leaves are frequently covered with a viscid exudation.

We were prevented from continuing our astronomical observations, in the afternoon, the weather becoming cloudy, and at evening a thunder storm commenced, which continued with short intermissions during the night. The lightning exhibited an incessant glare, and peals of thunder which seemed to shake the earth to its centre, followed each other in rapid succession.

On Monday 19th, we moved on, and ascending the Platte about thirty miles, arrived in the evening at a place where the hills on the north side close in, quite to the bed of the river. On both sides they became more broken and elevated, and on the north, they approached so near to the bed of the Platte, that we were under the necessity of travelling across them. We were glad, however, of any change of scene. The monotony of a vast unbroken plain, like that in which we had now travelled, nearly one hundred and fifty miles, is little less tiresome to the eye, and fatiguing to the spirit, than the dreary solitude of the ocean.

With this change of the surface, some change is observed in the vegetable products of the soil. Here we first saw a new species of prickly poppy,[*] with a spreading white flower, as large as that of the common poppy of the gardens. The aspect of this plant is very similar to that of the common poppy, except that the leaves are covered with innumerable large and strong prickles. When wounded it exudes a thick yellowish sap, intensely bitter to the taste. On the summits of some of the dry sandy ridges, we saw a few of the plants called Adam's needles, (Yucca, *angustifolia*) thriving with an appearance of luxuriance and verdure, in a soil which bids defiance to almost every other species of vegetation. Nature has, however, fitted the yucca, for the ungenial soil it is destined to occupy. The plant consists of a large tuft of rigid spear-pointed leaves, placed immediately upon the root, and sending up in the flowering season, a stalk bearing a cluster of lilliaceous flowers as large as those of the common tulip of the gardens. The root bears more resemblance to the trunk of a tree, than to the roots of ordinary plants. It is two or three inches in diameter, descending undivided to a great depth below the surface, where it is impossible the moisture of the earth should ever be exhausted, and there terminates in numerous spreading branches. In some instances the sand is blown from about the root, leaving several feet of it exposed, and supporting the dense leafy head, at some distance from the surface.[†]

Several bisons and other game, had been seen in the course of the day, but nothing taken. As our provisions were now exhausted, it was resolved to remain encamped where we were, while parties were sent out in different directions to hunt.[‡]

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[*] Argemone alba, a large plant very distinct from A. mexicana.

[†] Other plants found here, were the great sunflower Helianthus *giganteus*, Asclepias *obtusifolia*, Ph., A. *viridiflora*, Ph., A. *syriaca*, and A. *incarnata*, Amorpha *canescens*, N., Erigeron *pumilum*, N., A. Veronica approaching V. *beccabunga*, Scutellaria *galericulata*, Rumex *venosus*, N., and several which are believed to be undescribed.

[‡] In rain water puddles, we remarked a new species of Branchiopoda belonging to the genus Apus; small crustaceous animals, which exhibit

Being now at a place where, as our guide informed us, the Pawnees often cross the Platte, and as it was our intention to ascend on the other side of the river, Major Long rode across to ascertain the practicability of fording, but the summer freshet being now as its height, it was found the river could not be crossed without swimming, and the design was relinquished. Six of our party including the hunters, were sent out in pursuit of game.

At camp, observations were taken for ascertaining longitude and other purposes. At evening, Mr. Peale returned, having killed an antelope at the distance of ten miles from the camp, and brought it within about four, where being fatigued and hungry, he had made a fire, cooked and ate part of the animal, and left the remainder, suspending a handkerchief near it, to protect it from the wolves. Soon afterwards others returned, and when all were collected, it appeared there had been killed one bison, two antelopes, and a hare, all at a distance from camp. Horses were accordingly sent out to bring in the meat, a part of which we attempted to dry during the night, by cutting it in thin pieces and exposing it over a slow fire, but a storm of wind and rain which continued greater part of the night, prevented our success in this attempt.

21st. The storm continued throughout the night, and the

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a miniature resemblance to the Ring or Horse-shoe crab, (Limulus polyphemus,) of our sea coast, but which are furnished with about sixty pairs of feet, and swim upon their back. The basins of water, which contained them, had been very much diminished by evaporation and infiltration, and were now crowded to excess, principally with the apus, great numbers of which were dying upon the surrounding mud, whence the water had receded. This species is distinguished from the *productus* of Bosc, and *montagui* of Leach, by not having the dorsal carina prolonged in a point behind; and from *cancriformis*, by the greater proportional width of the thorax, and more obtuse emargination behind. The length of the thorax along the middle, is three-tenths of an inch, and its greatest breadth somewhat more. It may be named *Apus obtusus*.

A very large species of Cypris, also inhabits these small rain water pools in great numbers, of which the valves are more than one-fifth of an inch in length.

following day was cold, with a heavy mist from the south-east.

After travelling this day our customary distance, which was about twenty-five miles, we were compelled to halt at a place where we could find no poles to set up our tents. We were fortunate in finding part of a tree which had drifted down the Platte, and which sufficed to make a fire for the cooking of our supper. An Indian dog who had made his appearance at the encampment on the preceding day, had followed us thus far, but kept aloof, not allowing us to come within one or two hundred yards of him.

On the following morning, six miles from our camp, we arrived at the confluence of the north and south fork of the Platte. We had halted here, and were making preparations to examine the north fork with a view of crossing it, when we saw two elk plunge into the river a little above us on the same side. Perceiving it was their design to cross the river, we watched them until they arrived on the other side, which they did without swimming. We accordingly chose the same place they had taken, and putting a part of our baggage in a skin canoe, waded across, leading our horses, and arrived safely on the other side; no accident having happened, except the wetting of such of our baggage as was left on the horses.

The North fork at its confluence is about eight hundred yards wide, is shoal and rapid like the Platte, and has a sandy bed. We were informed by our guide who had been repeatedly to its sources, that it rises within the Rocky Mountains, about one hundred and twenty miles north of the sources of the Platte.

It is probably the river which was mistaken by Captain Pike for the Yellow-stone, and has been laid down as such on his map, whence the mistake has been copied into several others. It has its source in numerous small streams, which descend from the hills surrounding a circumscribed valley within the mountains, called the Bull-pen. This basin is surrounded by high and rugged mountains, except at the place where the North fork passes into the plains. On each side of this strait, or pass, are high and abrupt rocky promontories, which confine the river to a narrow channel. The diameter of the circumscribed valley, called the Bull-pen, is one day's travel, about twenty miles. The upper branches of the North fork have some timber, mostly cotton-wood and willow, and abound in beaver.*

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* *Castor fiber.* Some of the European naturalists appear to be in doubt, whether or not, those of Europe are of the same species with ours, from the circumstance of the former not erecting habitations for themselves, thus appearing to differ at least in habit, from the North American ones, (which are usually but improperly called, Canada beaver, as they are not confined to Canada, but are found far south in the United States, and east to the confluence of the Ohio and Mississippi,) but it is possible, that the aboriginal manners of the European beavers, corresponded with those of ours, and that necessity, resulting from the population of the country by civilized man, compelled them to resort to a different mode of life, to escape the certain destruction, with which the great demand for their fur, threatened them. But as the European beaver is smaller than ours, other naturalists have regarded it as a distinct species. In those districts of country of North America, from which they have not yet been exterminated, and which are populated by the whites, as particularly on the Mississippi, above the Ohio, and below St. Louis, we have not heard that they build, but it is more than probable, that, as in Europe, they change their mode of life, in order to be the more effectually concealed from view. From subsequent observation, we have learned, that the beaver does not attempt to dam large streams, perceiving at once the impracticability of the undertaking: his object in damming a stream appears to be, to preserve a constancy in the height of the water, in order that the entrance to his habitation in the bank may be concealed, and that the curious conical edifice, may not be destroyed by a sudden flood, or too much exposed by a deficiency of water.

An Indian informed us, that in his time, he has caught three specimens of this animal, that had each a large white spot on the breast. Singular accounts of this animal are given us by the hunters, but which we had no opportunity of verifying.

Three Beavers were seen cutting down a large cotton wood tree: when they had made considerable progress, one of them retired to a short distance, and took his station in the water, looking steadfastly at the top of the tree. As soon as he perceived the top begin to move towards its fall, he gave notice of the danger to his companions, who were still at work, gnawing at its base, by slapping his tail upon the surface of the water, and they immediately ran from the tree, out of harm's way.

The spring beaver are much better for commerce, than those of the autumn and early winter, as the fur is longer and more dense. But the

From the limited information communicated to the public, on the subject of Mr. Hunt's Expedition to the mouth of the Columbia, commenced in the year 1811, it appears that a part of the men, engaged in that undertaking, in their return from the Pacific, crossed the Rocky Mountains from some one of the upper branches of Lewis' river, and falling upon the sources of the North fork of the Platte, descended thence to the Missouri.

On the 28th of June 1812, Mr. Robert Stewart, one of the partners of the Pacific Fur Company, with two Frenchmen, M'Clellan and Crooks, left the Pacific ocean with despatches for New York.

Having proceeded about seven hundred miles, they met Mr. Joseph Miller, on his way to the mouth of the Columbia. He had been considerably to the south and east, and had fallen in with the Black-arms, and Arrapahoes, who wander about the sources of the Arkansa. By the latter of these he had been robbed, in consequence of which, he was now reduced to starvation and nakedness.

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beaver taken in the vicinity of the Rocky Mountains, is almost equally good during the year.

Mr. Frazer, a gentleman who has been several years engaged in the fur trade, in the interior of North America, on the Columbia, and in North California, in speaking of the beaver, mentioned a circumstance, which we do not remember to have seen recorded. The lodges are usually so placed, that the animals ascend the stream some distance, to arrive at the spot whence they procure their food. They make their excursions under water, and they have at equal distances, excavations under the bank, called washes, into which they go and raise their heads above the surface, in order to breathe, without exposing themselves to be seen. In winter the position of these washes is ascertained, by the hollow sound the ground returns when beaten; and the beavers are sometimes taken, by being pursued into these holes, the entrances to which are afterwards closed.

Otters are frequent on the Missouri. We had an opportunity of seeing on the ice of Boyer creek, a considerable number of the tracks or paths of Otters; they were the more readily distinguishable, from there being snow of but little depth on the ice, and they appeared as if the animal was accustomed to slide in his movements on the ice, as there were, in the first place, the impressions of two feet, then a long mark clear of snow a distance of three or four feet, then the impressions of the feet of the animal, after which the sliding mark, and so on alternately. These paths were numerous, and passed between the bank and a situation, where a hole had been in the ice, now frozen over.

Mr. Stewart and his companions had fifteen horses, but soon afterwards met with a band of the Crow Indians, near the Rocky Mountains, who behaved with the most unbounded insolence, and finally stole every horse belonging to the party.

They now found themselves on foot, with the Rocky Mountains, and a journey of two thousand miles before them; fifteen hundred of which was through a country wholly unknown, as their route lay considerably to the south of that of Lewis and Clark.

Putting the best face upon their prospects, they pursued their journey towards the Rocky Mountains, travelling east southeast, until they struck the "head waters of the great river Platte," which they followed to its mouth, having spent the winter upon it, six hundred miles from the Missouri.*

The confluence of the North fork and the Platte is, according to our estimate of distances, one hundred and forty-nine miles by our courses, from the Pawnee Loup village.

Some of the upper branches of the Wolf river, head about thirty miles to the north of this point.

After fording the North fork, we crossed a narrow point of low prairie to the Platte, where, as it was now near night, we resolved to encamp, and attempt the passage of the river on the following day.

Our view of the opposite margin of the Platte, during this day's march, had been intercepted by an elevated swell of the surface, which extended along, parallel to the river, that we were now approaching. Immediately upon surmounting this undulation we saw before us, upon the broad expanse of the left margin of the river, immense herds of bisons, grazing in undisturbed possession, and obscuring, with the density of their numbers, the verdant plain; to the right and left, as far as the eye was permitted to rove, the crowd seemed hardly to diminish, and it would be no exaggeration to say, that at least ten thousand here burst on our sight in the instant. Small columns of dust were occasionally wafted by the wind from bulls that were *pawing* the earth, and rolling; the interest of action was also communicated to the scene, by the unwieldy playfulness of some individuals, that the eye would occasionally rest upon, their real or affected combats, or by the slow or rapid progress of others to and from their watering places. On the distant bluffs, individuals were constantly disappearing, whilst others were presenting themselves to our view, until, as the dusk of the evening increased, their massive forms, thus elevated above the line of other objects, were but dimly defined on the skies. We retired to our evening fare, highly gratified with the novel spectacle we had witnessed, and with the most sanguine expectations of the future.

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* The narrative from which this sketch is taken, was published in the Missouri Gazette.

In the morning we again sought the living picture, but upon all the plain, which last evening was so teeming with noble animals, not one remained. We forded the Platte with less delay and difficulty, than we had encountered in crossing the North fork.

It is about nine hundred yards wide, and very rapid, but so shoal that we found it unnecessary to dismount from our horses, or to unpack the mules. We found the plains on the south side of the Platte, more closely depastured, than those we had before seen. The grass is fine and short, forming a dense and matted turf, as in the oldest pastures.

Meeting with wood at about three o'clock P. M., we resolved to encamp. On the two preceding evenings, we had found it difficult to collect as much wood as sufficed to kindle a fire, which was afterwards kept up with the dung of the bison, though not without some difficulty, as the weather was rainy.

The dung of the bison is used as fuel in many parts of the woodless country southwest of the Missouri, by the Indians, and by hunters, who often encamp where no wood is to be found. We learn from Sonini and others, that the excrement of the camel, mixed with chopped straw and afterwards dried, is similarly used in the woodless parts of Egypt.

The hills on the south side of the Platte, above the confluence of the north fork, become more abrupt and elevated, approaching in character those of the Missouri which are destitute of stone. There is here the same transcript of Alpine scenery, in miniature, which constitutes so striking a feature in the Missouri landscape, when viewed from the river bottom.

We had no sooner crossed the Platte, than our attention was arrested by the beautiful white primrose (Œnothera pinnatifida. N.) with its long and slender corrolla reclining upon the grass. The flower, which is near two inches long, constitutes about one half of the entire length of the plant.*

The valley of the Platte, above the forks, is much narrower, and a little more irregular in direction than below, and is frequently interrupted by small hills running in towards the river. On ascending these hills, we found them of a coarse sand, and containing more gravel and small pebbles than below. Among the gravel stones small fragments of flesh-coloured feldspar are distinguished. About the summits of the hills we saw some detached pieces of fine carnelian, with agates and chalcedony.

We had often examined, with some anxiety, the turbid waters of the Platte, hoping thereby to gain information respecting the predominating rock formations of the mountainous district, from which that river descends.

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* Considerable additions were made, about the *forks* of the Platte, to our collections of plants. We found here, among others, the Pentstemon cristatum, *N.* Coronopus dydima, *Ph.* Evolvulus Nuttallianus, Roemer, and Shultz. Orobus dispar, Cleome tryphilla, Petalostemon candidum, *Ph.*, and P. violaceum. Aristida pallens, *N.* two species of a genus approximating to Hoitzia, several species of Astragalus, and many others.

It had been a received opinion, among some of the geologists of the United States, that the Rocky Mountains were not of primitive rocks; we had, hitherto, observed nothing which could either confirm or invalidate this opinion.

The great alluvial formation, which occupies the country on both sides of the lower portion of the river Platte, is an almost unmixed siliceous sand, in no manner distinguishable from the *debris* of the sandstones of transition mountains. Near the forks of the Platte, we first observed that the waters of that river bring down, among other matters, numerous small scales of mica. This also is a constituent of the sandstones of the lower secondary or transition formations. The fragments of unmixed and crystalline feldspar, which now began to be of frequent occurrence, were considered as the first convincing evidence of the primitive character of the Rocky Mountains. These fragments of feldspar, we believed, could have been derived from no other than primitive rocks.

During all the day on the 23rd, we travelled along the south side of the Platte, our course inclining something more towards the southwest than heretofore.

Intermixed in the narrow fringe of timber, which marks the course of the river, are very numerous trees, killed by the action of the beaver or by the effects of old age, their decorticated and bleached trunks and limbs strongly contrasting with the surrounding objects, many of them rendered doubly interesting by affording a support to the nests of the bald eagle, elevated like a beacon in the horiz[illegible] traveller.

Large herds of bisons were seen in every direction, but as we had already killed a deer, and were supplied with meat enough for the day, none of the party were allowed to go in pursuit of them. Prickly pears became more and more abundant as we ascended the river, and here they occurred in such extensive patches as considerably to retard our progreat, it being wholly impracticable to urge our horses across them. The Cactus *ferox* is the most common, and, indeed, the only species which is of frequent occurrence. It has been stated by a traveller to the upper Missouri,* that the antelope, which inhabits the extensive plains of that river and its tributaries, finds means to make this plant, notwithstanding its terrific armature of thorns, subservient to its necessities, "by cutting it up with his hoofs." We were able to discover no confirmation of this statement; it may, however, be applicable to some plains, more arid and sterile than any we have passed, where the antelopes may be driven by necessity to the use of this hard expedient.

On the following day, we saw immense herds of bisons, blackening the whole surface of the country through which we passed. At this time they were in their summer coat. From the shoulders backward, all the hinder parts of the animal are covered with a growth of very short and fine hair, as smooth and soft to the touch as a piece of velvet. The tail is very short and tufted at the end, and its services, as a fly-brush, are confined to a very limited surface.

The fore parts of the body are covered with long shaggy hair, descending in a tuft behind the knee, in a distinct beard beneath the lower jaw, rising in a dense mass on the top of his head as high as the tip of the horns, matted and curled on his front so thickly as to deaden the force of the rifle-ball, which rebounds from the forehead or lodges in the hair, causing the animal only to shake his head as he bounds heavily onwards. The head is so large and ponderous, in proportion to the size of the body, that the supporting muscles, which greatly enlarge the neck, form over the shoulders, where they are imbedded on each side of elongated vertebral processes distinguished by the name of hump ribs, a very considerable elevation called the hump, which is of an oblong form, diminishing in height as it recedes, so as to give considerable obliquity to the line of the back.

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* Nuttall's Genera of North American plants. vol i. p. 296.

The eye is small, black, and piercing; the horns, which are black and remarkably robust at base, curve outward and upward, tapering rapidly to the tip. The profile of the face is somewhat convexly curved, and the superior lip, on each side, papillous within, is dilated and extended downward so as to give a very oblique appearance to the lateral rictus or gape of the mouth, considerably resembling, in this respect, the ancient architectural bas-reliefs representing the heads of the ox. The physiognomy is menacing and ferocious, and the whole aspect of the animal is sufficiently formidable to influence the spectator, who is, for the first time, placed near him in his native wilds, with certain feelings which indicate the propriety of immediate attention to personal safety.

The bison cow bears the same relation, as to appearance, to the bull, that the domestic cow does to her mate; she is smaller, with much less hair on the anterior part of her body, and though she has a conspicuous beard, yet this appendage is comparatively short; her horns also are much less robust and not partially concealed by hair.

The dun colour prevails on the coat of the bison, but the long hair of the anterior part of the body, with the exception of the head, is more or less tinged with yellowish or rust colour. The uniformity of colour, however, amongst these animals is so steadfast, that any considerable deviation from the ordinary standard is regarded by the natives as effected under the immediate influence of the Divinity.

A trader of the Missouri informed us that he had seen a grayish-white bison, and that another, a yearling calf, was distinguished by several white spots on the side, and by a white frontal mark and white fore feet.

Mr. J. Dougherty saw in an Indian hut, a bison head, very well prepared, which had a white star on the front; the owner valued it highly, calling it his great medicine; he could not be tempted to part with it, "for," said he, "the herds come every season into the vicinity to seek their white-faced companion."

They are the skins of the cows, almost exclusively, that are used in commerce; those of the bulls being so large, heavy, and difficult to prepare, that this is, comparatively, seldom attempted.

That the bison formerly ranged over the Atlantic states there can be no doubt, and Lawson informs us that even in his time some were killed in Virginia, and Cumming, in his Sketches of a Tour to the western country, informs us that "long after the country (Kentucky) began to be generally settled, and ceased to be a hunting ground by the Indians," the "buffaloes, bears, and deer were so plenty in the country that little or no bread was used," and "the facility of gaining them prevented the progress of agriculture, until the poor innocent buffaloes were completely extirpated, and the other wild animals much thinned." This process of extirpation has not since been relaxed, and the bison is now driven beyond the lakes, the Illinois, and southern portion of the Mississippi rivers, their range extending from the country west of Hudson's bay to the northern provinces of Mexico. They have not yet crossed the entire breadth of the mountains at the head of the Missouri, though they penetrate, in some parts, far within that range, to the most accessible fertile valleys, particularly the valley of Lewis' river. It was there that Mr. Henry and his party of hunters wintered, and subsisted chiefly upon the flesh of these animals, which they saw in considerable herds, but the Indians affirmed that it was unusual for the bisons to visit that neighbourhood.

All the mountains which we ascended were more or less strewed with the dung of these animals, about the lower parts, a conclusive evidence that this portion of the range had been traversed by the bisons.

The cows remain fat from July to the latter part of December. The rutting season occurs towards the latter part of July, and continues until the beginning of September;

after which month the cows separate from the bulls, in distinct herds, and bring forth their calves in April. The calves seldom separate themselves from the mother under the age of one year, and cows are often seen accompanied by the calves of three seasons.

The meat of the bison has often been compared with that of the domestic ox, and the preference yielded to the latter, as an article of food. This decision, however, we cannot, from our experience confirm; it appeared to us that although of a somewhat coarser fibre, yet, after making due allowance for the situation in which we were placed, our appetites often increased by hunger and privation, that the flesh of the bison is in no degree inferior in delicacy and sweetness to that of the common ox. But that the flesh of those which we were accustomed to eat was more agreeably sapid than that which formed a subject of comparison to the authors alluded to, is altogether possible, as the grass upon which they usually *fed* was short, firm, and nutritious, considerably differing in its nature from the luxuriant and less solid grass nourished by a fertile soil. It was preferred by the party to the flesh of the elk or deer, which was thrown away when it could be substituted by the bison meat.

To the fat of the bison we conceded a decided superiority over that of the common ox, as being richer and sweeter to the taste.

As our stock of provision was nearly exhausted, permission was given, when we had arrived near a suitable place for our mid-day halt, to the hunters to go out in pursuit of bisons, and in a short time two were killed. The choice parts of these were taken and placed upon pack-horses, to be carried forward to our next encampment, where some of it might be *jerked* on the ensuing day, which was Sunday.

Aside from the vast herds of bisons which it contains, the country along the Platte is enlivened by great numbers of deer, badgers,* hares,† prairie wolves, eagles, buzzards,‡ ravens, and owls: these, with its rare and interesting plants, in some measure relieved the uniformity of its cheerless scenery. We found a constant source of amusement in observing the unsightly figure, the cumbrous gait, and impolitic movements of the bison; we were often delighted by the beauty and fleetness of the antelope, and the social comfort and neatness of the prairie dog.

This barren and ungenial district appeared, at that time, to be filled with greater numbers of animals than its meagre productions are sufficient to support. It was, however, manifest that the bisons, then thronging in such numbers, were moving towards the south. Experience may have taught them to repair at certain seasons to the more luxuriant plains of Arkansa and Red river. What should ever prompt them to return to the inhospitable deserts of the Platte, it is not, perhaps, easy to conjecture. In whatever direction they move, their parasites and dependents fail not to follow. Large herds are invariably attended by gangs of meagre, famine-pinched wolves, and flights of obscene and ravenous birds.

We have frequently remarked broad shallow excavations in the soil, of the diameter of from five to eight feet, and greatest depth from six inches to eighteen. These are of rare occurrence near the Missouri, as far as Engineer Cantonment, and in other districts where the bison is seldom seen at the present day; and when they do exist there, they are overgrown by grass and nearly obliterated. As you approach the country, still the constant residence of these animals, the excavations become more numerous, and are less productive of grass. They now are so numerous as to be of constant recurrence, offering a considerable impediment to the traveller, who winds his way amongst them, and are entirely destitute of grass, their surface being covered with a deep dust. Until recently, we had no opportunity to observe the cause which gives rise to these appearances, but we were now convinced that they were the result of the habit which the bulls have, in common with the domestic bull, of scraping up the earth with their fore feet, in the process of dusting themselves; they serve also as places for rolling and wallowing, a gratification which the bison bull indulges in as frequently, and in the same manner as the horse.

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* Meles labradoricus.

† Lepus variabilis? possibly it may prove to be L. glacialis of Leach.

‡ Vultur aura.

Some extensive tracts of land along the Platte, particularly those portions which are a little elevated, with an undulating or broken surface, are almost exclusively occupied by a scattered growth of several species of wormwood, (Artemisia.) some of which are common to this country and that on the lower Missouri; we may enumerate the following—A. *Ludoviciana*, A. *longifolia*, A. *serrata*, A. *columbiensis*,[*] A. *cernua*, A. *canadensis*; most of these species have simple or finely divided compound leaves, which are long and slender, and canescent, like those of the A. *absynthium*, the common wormwood of the gardens. The peculiar aromatic scent, and the flavor of this well known plant, is recognized in all the species we have mentioned. Several of them are eaten by the bisons, and our horses were sometimes reduced to the necessity of feeding upon them.

The intense reflection of light and heat from the surface of many tracts of naked sand, which we crossed, added much to the fatigue and suffering of our journey. We often met with extensive districts covered entirely with loose and fine sand, blown from the adjacent hills. In the low plains along the river, where the soil is permanent, it is highly impregnated with saline substances, and too sterile to produce any thing except a few stinted carices and rushes.

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[*] A. *Columbiensis.* This is said to be the plant known to the party of Lewis and Clark, by the name of "wild sage." It occurs abundantly in the barren plains of the Columbia river, where it furnishes the sole article of fuel or of shelter, to the Indians, who wander in those woodless deserts. See Nuttall's Genera. vol. ii. p. 142.

On the evening of the twenty-fourth, after we had encamped, several bull bisons, being on the windward side, came so near us as to create a disturbance among our horses, who were not yet so familiarized to the formidable appearance of those animals, as to regard their near approach with indifference. The bulls, at length, became troublesome, approaching so near, to smell at the horses, that some of the latter broke the cords by which they were fastened and made their escape. A man was then sent to frighten away the bisons, who, in their turn, exhibited as much terror as they had occasioned to our horses.

On Sunday, the 25th, we remained encamped, and some of the men were employed in drying a part of the meat killed on the preceding day. This was done that we might be able to carry constantly with us a small supply of provisions, in reserve against any occasion when we might not meet with game.

The magnetic variation equated from two sets of observations, was found to be 14° east. Observations for longitude were made; it was also attempted to take the meridian altitude of Antares, for ascertaining the latitude, but the observation was commenced a few minutes too late, we having been longer occupied in making the preceding observations than we had anticipated.

26th. The weather had now been for some days fair. As we approached the mountains, we felt or fancied, a very manifest change in the character of the weather, and the temperature of the air. Mornings and evenings were usually calm, and the heat more oppressive than in the middle of the day. Early in the forenoon, a light and refreshing breeze often sprung up, blowing from the west or southwest, which again subsided on the approach of night. This phenomenon was so often observed that we were induced to attribute it to the operation of the same local cause, which in the neighbourhood of the sea, produces a diurnal change in the winds, which blow alternately to and from the shore. The Rocky Mountains may be considered as forming the shore of that sea of sand, which is traversed by the Platte, and extends northward to the Missouri, above the great bend.

The rarefaction of the air over this great plain, by the reverberation of the sun's rays during the day, causes an ascending current, which is supplied by the rushing down of the condensed air from the mountains. Though the sun's rays in the middle of the day, were scorching and extremely afflictive to our eyes, the temperature of the air as indicated by the thermometer, had hitherto rarely exceeded 80° Fah.

In the forenoon we passed a range of hills more elevated than any we had seen west of the Missouri. These hills cross the Platte from north to south, and though inconsiderable in magnitude, they can be distinguished extending several miles on each side of the river. They consist principally of gravel, intermixed with small water-worn fragments of granite and other primitive rocks, but are based on a stratum of coarse friable sandstone, of a dark gray colour, which has been uncovered, and cut through by the bed of the Platte.

This range may perhaps be a continuation or spur from the black hills mentioned by Lewis and Clark, as containing the sources of the Shienne, and other tributaries to the Missouri, at no great distance to the north of the place where we now were.

At evening we arrived at another scattering grove of cotton-wood trees, among which we placed our camp, immediately on the brink of the river. The trees of which these insulated groves are usually composed, from their low and branching figure, and their remoteness from each other, as they stand scattered over the soil, they occupy, revived strongly in our minds the appearance and gratifications resulting from an apple orchard, for which from a little distance they might readily be mistaken, if seen in a cultivated region. At a few rods distant on our right hand, was a fortified Indian camp, which appeared to have been recently occupied. It was constructed of such broken half-decayed logs of wood as the place afforded, intermixed with some skeletons of bisons recently killed. It is of a circular form, enclosing space enough for about thirty men to lie down upon. The wall is about five feet high, with an opening towards the east, and the top uncovered.

At a little distance in front of the entrance of this breastwork, was a semicircular row of sixteen bison skulls, with their noses pointing down the river. Near the centre of the circle which this row would describe, if continued, was another skull marked with a number of red lines.

Our interpreter informed us that this arrangement of skulls and other marks here discovered, were designed to communicate the following information, namely, that the camp had been occupied by a war party of the Skeeree or Pawnee Loup Indians, who had lately come from an excursion against the Cumancias, Ietans, or some of the western tribes. The number of red lines traced on the painted skull indicated the number of the party to have been thirty-six; the position in which the skulls were placed, that they were on their return to their own country. Two small rods stuck in the ground, with a few hairs tied in two parcels to the end of each, signified that four scalps had been taken.

A record of facts which may be important and interesting to others, is thus left for the benefit of all who may follow. For our part we were glad to be informed, that one lawless and predatory band of savages had lately left the country we were about to traverse. We were never without some anxiety on the subject of Indian war parties, who are known frequently to remunerate themselves for any discomfiture or loss they may have sustained, by making free booty of the property and the scalps of the first weak or unguarded party they may meet.

At a late hour in the night, after our camp had become quiet, we were suddenly awakened by a loud rushing noise, which in a moment seemed to reach the centre of our encampment; immediately a piercing exclamation of terror was heard, from one of our interpreters, which from the peculiarity of its tone, seemed to have escaped from a throat under the grasp of death. It became immediately apparent that the cause of the alarm proceeded from our horses, all of whom had broken loose from their stakes, near the Indian fort, and had run in a state of fright through our camp, with the apparent desire to gain our protection against something in their rear. We proceeded in a cautious manner to reconnoitre the environs of the camp, stooping low, in order that the eye might be directed along the level of the top of the grass, which was here of a very luxuriant growth, in order to detect in the gloom, any inimical object that might rise above it; having thus convinced ourselves that nothing dangerous to our safety remained very near to us, the horses were again secured, and we betook ouserlves to our beds, with the reflection, that they had probably been alarmed by the too near approach of bisons.

We had scarce fallen asleep, when we were aroused the second time, by the discharge of a gun close to our tent. This was the signal which we had all understood was to be given by the sentinel, in case of the hostile approach of Indians to the camp. We therefore bestirred ourselves, being well assured we had other business at hand, than the securing of horses. Several of the party went to reconnoitre the old fort above mentioned, but nothing was discovered and they returned.

After all were assembled at camp, Major Long informed us the alarm had been given by his order, and was intended to test the coolness and self-possession of the party, and to prepare us in some measure for an unpleasant occurrence, we all thought too likely to happen, which was no other than a serious attack from the Indians, to be made according to their custom at that highly unseasonable hour of the morning.

Since leaving the Missouri, we had never indulged a disposition to sluggishness, accustoming ourselves to rise every morning long before the sun, but we still found we left that small spot of earth, on which we had rested our limbs, and which had become warm and dry by the heat of our bodies with as much reluctance, as we have felt at quitting softer beds.

The mode of rallying now prescribed, was the following: immediately after an alarm should be given, the party should seize their arms, and form in front of the tents, in the rear of the line of packs, and await any orders that might be given. The sentinel giving the alarm, should proceed to the tent of the officers, in order to acquaint them with the cause. Major Long and Captain Bell should reconnoitre about the encampment, and if practicable ascertain the real occasion of the alarm. Farther movements to be regulated as the emergency might require.

This alarm was the occasion of our starting on the morning of the 26th at an earlier hour than usual. We rode on through the same uninteresting and dreary country as before, but were constantly amused at observing the motions of the countless thousands of bisons, by which we were all the time surrounded. The wind happening to blow fresh from the south, the scent of our party was borne directly across the Platte, and we could distinctly note every step of its progress through a distance of eight or ten miles, by the consternation and terror it excited among the buffaloe. The moment the tainted gale infected their atmosphere, they ran with as much violence as if pursued by a party of mounted hunters, and instead of running from the danger, turned their heads towards the wind, eager to escape from the terrifying scent, they pushed forward in an oblique direction towards our party, and plunging into the river they swam and waded, and ran with the utmost violence, in several instances breaking through our line of march, which was immediately along the left bank of the Platte. One of the party perceiving from the direction taken by the bull, that preceded the extended column of his companions, that he intended to emerge from the low river bottom, at a particular point, where the precipitous bank was worn by much travelling, into a deep notch, urged his horse rapidly forward to gain this station, that he might have a near view of these interesting animals; he had no sooner arrived at this point, than the formidable leader, bounding up the steep, gained the summit of the bank, with his fore feet, and in this position abruptly halted from his full career, and glared fiercely at the horse, which now occupied his path. The horse, trembling violently from fear of this sudden apparition, would have wheeled and exerted his utmost speed, had he not been restrained by the greatest strength of his rider; he recoiled however a few feet, and sunk down upon his hams. The bull halted but a moment, then being urged forward by the irresistible impulse of the moving column behind, rushed onward by the half sitting horse. The multitude came swiftly on, crowding up the narrow defile. The party had now arrived, and extending along a considerable distance, the bisons ran in a confused manner in various directions to gain the distant bluffs; numbers were compelled to pass through our line of march, between the horses. This scene added to the plunging and roaring in the river of those that were yet crossing, produced a grand effect, which was still heightened, by the fire opened upon them by our hunters. As they ascended the bank, innumerable opportunities offered of selecting and killing the fattest, and it was with difficulty, we restrained our hunters from slaughtering many more than we needed.

It is remarked by hunters, and appears to be an established fact, that the odour of a white man is more terrifying to wild animals, particularly the bison, than that of an Indian. This animal, in the course of its periodic migrations, comes into the immediate neighbourhood of the permanent Indian villages, on the Missouri and the Platte. One was seen by our hunters within six miles of the Grand Pawnee village, and immediately about the towns, we saw many heads and skeletons, of such as had been killed there the preceding spring. They had come in, while the Pawnees were absent on their winter's hunt, and at their return, we were informed they found the bisons immediately about their villages. They disappeared invariably from the neighbourhood of the white settlements within a few years. We are aware that another cause may be found for this, than the frightful scent of the white man, which is the impolitic, exterminating war, which he wages against all unsubdued animals within his reach.

It would be highly desirable, that some law for the preservation of game, might be extended to, and rigidly enforced in the country, where the bison is still met with; that the wanton destruction of these valuable animals, by the white hunters, might be checked or prevented. It is common for hunters to attack large herds of these animals, and having slaughtered as many as they are able, from mere wantonness and love of this barbarous sport, to leave the carcasses to be devoured by the wolves and birds of prey; thousands are slaughtered yearly, of which no part is saved except the tongues. This inconsiderate and cruel practice, is undoubtedly the principal reason why the bison flies so far and so soon from the neighbourhood of our frontier settlements.

It is well known to those in the least degree conversant with the Indians, that the odour which their bodies exhale, though very strong and peculiar, is by no means unpleasant,[*]

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[*] We may add on this subject the testimony of Lawson, the early historian of North Carolina. After describing the huts of the native inhabi-

at least to most persons. A negro in the employment of the Missouri fur company, and living at fort Lisa, was often heard to complain of the intolerable scent of the squaws; in like manner the Indians find the odour of a white man, extremely offensive. In the language of the Peruvian Indians, are three words to express their idea of the smell of the European, the Aboriginal American, and the negro. They call the first *Pezuna*, the second *Posco*, and the third *Grajo*.†

After passing the range of hills, above mentioned, the surface subsides nearly to a plain, having however, manifestly a greater inclination than below. The velocity of the current of the river is much increased, the bed narrower, and the banks more precipitous. We passed several extensive tracts nearly destitute of vegetation. The surface of these consisted entirely of coarse sand and gravel, with here there an insulated mass of clay, highly impregnated with salt, and gnawed and licked into various singular shapes, exhibiting the forms of massive insulated columns, huge buttresses, prominent angles and profound excavations, fortuitously mingled, and which are now gradually diminishing, under the action of the cause which produced them. The present surface upon which they repose, seems to be a stratum of a different earth, which does not afford the condiment so attractive to the animals; the consequence is that the licking and chewing, principally, heretofore affecting the surface, on which the animal stood, is now directed against the upright portions of this singular grand excavation, and most remarkable of all known salt licks.

Some extensive portions of the immediate bottom land,

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tants, he adds, "These dwellings are as hot as stoves, where the Indians sleep and sweat all night; yet I never felt any ill unsavory smell in their cabins, whereas should we live in our houses as they do, we should be poisoned with our own nastiness; which confirms the Indians to be, as they really are, some of the sweetest people in the world." New Voyage to Carolina, p. 177. London, 4to. 1709.

† See Humboldt's New Spain, i, p. 184.

along the river, were white with an effloresced salt; but this being impure and but imperfectly soluble, did not appear to have been licked.

Towards evening we passed two springs, of transparent, but impure and brackish water. They were the first we had met with on the Platte. Among a considerable number of undescribed plants collected on the 27th, are three referrible to the family of the rough-leaved plants, (asperifoliæ) one of them belonging to a genus not heretofore known in the United States. It has a salver-form corrolla, with a large, spreading, angular, plaited border. Another plant very conspicuously ornamental to these barren deserts, is a lactescent annual, belonging to the family of the convolvulaceæ, with a bright purple corrolla, as large as that of the common Stramonium. We also observed the white stalked primrose, (Œnothera *albicaulis*, N.) a very small white flowered species of Talinum, and some others. We observed in repeated instances, several individuals of a singular genus of reptiles (Chirotes. Cuv.) which, in form, resemble short serpents, but are more closely allied to the lizards, by being furnished with two feet. They were so active that it was not without some difficulty that we succeeded in obtaining a specimen. Of this (as was our uniform custom, when any apparently new animal was presented) we immediately drew out a description. But as the specimen was unfortunately lost, and the description formed part of the Zoological notes and observations, which were carried off by our deserters, we are reduced to the necessity of merely indicating the probability of the existence of the *Chirotes lumbricoides* of naturalists, within the territory of the United States.

At night we were again alarmed by a disturbance among our horses, of which we were not able to ascertain the cause. Some of the party had, on the preceding day, reported that they had seen Indians at a distance, that they were on horseback, &c. but of this there could be no certainty, the imagination often representing a herd of antelopes, or other animals, seen at a distance, and perhaps distorted by the looming of the prairie, as so many mounted Indians. We had often found ourselves more grossly abused by our eye-sight, than is supposed in this instance, having mistaken turkeys for bisons, wolves for horses, &c.

28th. We breakfasted, and left our encampment before 5 o'clock. We had not proceeded far when we discovered about thirty wild horses at a distance before us. They had taken our scent, and run off in a fright, when we were a mile distant. Their activity and fleetness surpassed what we had expected from this noble animal in his savage state. In the course of the day we saw other herds, but all at a distance. The country south of the Platte contains, as we are informed, vast numbers of horses. They are of the domesticated stock introduced by the Spaniards, but they multiply rapidly in their present state of regained freedom, and are apparently wilder than any of the native occupants of this country. They are of various colours, and of all sizes, there being many colts, and some mules, among them. Their playfulness seemed to be excited, rather than their fears, by our appearance, and we often saw them, more than a mile distant, leaping and curvetting, involved by a cloud of dust, which they seemed to delight in raising.

About some sandy ridges, which we passed in the middle of the day, several miliary rattle snakes were seen, two of which were killed. These had been occasionally met with all along the Platte, but were by no means numerous. Mr. Peale killed a female antelope, without leaving our line. The animal had not been able to satisfy its curiosity, and stood at a little distance gazing at us, until it was shot down.

During the day we passed three small creeks discharging into the Platte from the northwest. One of these, called by the Indians Bat-so-ah, or Cherry creek, heads in the Rocky Mountains. On these creeks are a few small cotton-wood and willow trees. These trees, as well as all those along the Platte, are low, with very large and branching tops, as is the case with all trees which grow remote from each other.

In the afternoon hunters were sent forward, but it was not without some difficulty that a single bison was killed, those animals having become much less frequent.*

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* A small fox was killed, which appears to be the animal mentioned by Lewis and Clark, in the account of their travels, under the name of the *burrowing fox*, (Vol. 2. p. 351.) It is very much to be regretted, that although two or three specimens of it were killed by our party, whilst we were within about two hundred miles of the Mountains, yet from the dominion of peculiar circumstances, we were unable to preserve a single entire skin; and as the description of the animal taken on the spot was lost, we shall endeavour to make the species known to naturalists, with the aid only of a head and a small portion of the neck of one individual, and a cranium of another, which are now before us.

In magnitude the animal is hardly more than half the size of the American red fox, (*Canis Virginianus*, of the recent authors,) to which it has a considerable resemblance. But, that it is an adult, and not the young of that species, the presence of the large carnivorous tooth, and the two posterior molar teeth of the lower jaw, on each side, sufficiently attest; these teeth, as well as all the others, being very much worn down, prove that the milk teeth have been long since shed.

The teeth, in form, correspond, to considerable exactness, with those of our red fox, but the anterior three and four false molares of both these species are sufficiently distinguished from the corresponding teeth of the gray, or tricoloured fox (C. cinereo-argenteus) by being wider at base, and less elongated perpendicularly, and by having the posterior basal lobe of each, longer and much more distinctly armed with a tubercle at tip.

Besides this disparity of dentition in the red and gray foxes, the general form of the cranium, and its particular detailed characters, as a less elevated occipital, and temporal crest, more profoundly sinuous junction of the malar with the maxillary bone, the absence of elevated lines bounding the space between the insertions of the lateral muscles, passing in a slightly reclivate direction between the orbital processes and the anterior tip of the occipital crest, and in particular the want of an angular process of the lower jaw beneath the spinous process in the cranium of the red fox, are sufficiently obvious characters to indicate even by this portion of the osseous structure alone, its specific distinctness from the gray fox. In these differences the osteology of the burrowing fox equally participates, and although besides these characters in common with the red fox, we may observe a correspondence in many other respects, yet there are also many distinctions which the cranium of this small species will present, when more critically compared with that well known animal, which consequently forbid us from admitting their identity. The common elevated space on the parietal bones between the insertions of the lateral muscles is one fourth wider, and extends further backward, so as to embrace a notable portion of the anterior angle of the sagitto-occipital crest; the recipient cavity in the inferior jaw for the attachment of the masseter muscle is more profound, and the coronoid process, less elevated than the top

Our small stock of bread was by this time so nearly exhausted, that it was thought prudent to reserve the remainder as a last resort, in case of the failure of a supply of game, or other accident. A quantity of parched maize, equal to a gill per day, to each man, was daily distributed to each of the three messes into which the party was divided. This was thrown into the kettle where the bison meat was boiled, and supplied the place of barley in the soup, always the first and most important dish. Whenever game was plenty we had a variety of excellent dishes, consisting of the choice parts of the bison, the tongue, the hump ribs, the marrow bones, &c. dressed in various ways. The *hump ribs* of the bison, which many epicures prefer to any other part of the animal, are the

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of the zygomatic arch, is more obtusely rounded at tip than that of the red fox.

The dimensions of the cranium, as taken by the callipers:

The entire length from the insertion of the superior incisores to the tip of the occipital crest is rather more than four inches and three-tenths. The least distance between the orbital cavities nine-tenths. Between the tips of the orbital processes less than one inch and one-tenth. Between the insertions of the lateral muscles, at the junction of the frontal and parietal bones, a half an inch. Greatest breadth of this space on the parietal bones thirteen-twentieths of an inch.

The hair is fine, dense, and soft. The head above is fulvous, drawing on ferruginous, intermixed with gray, the fur being of the first mentioned colour, and the hair whitish at base, then black, then gray, then brown. The ridge of the nose is somewhat paler, and a more brownish dilated line passes from the eye to near the nostrils, (as in the C. corsac). The margin of the upper lip is white; the orbits are gray; the ears behind are paler than the top of the head, intermixed with black hairs and the margin, excepting at tip, white; the inner side is broadly margined with white hairs; the space behind the ear is destitute of the intermixture of hairs; the neck above has longer hairs, of which the black and gray portions are more conspicuous; beneath the head pure white.

The body is slender, and the tail rather long, cylindrical, and black.

It runs with extraordinary swiftness, so much so, that when at full speed its course has been, by the hunters, compared to the flight of a bird skimming the surface of the earth. We had opportunities of seeing it run with the antelope, and appearances sanctioned the belief, that in fleetness it even exceeded that extraordinary animal, famed for swiftness, and for the singularity of its horns. Like the corsac of Asia it burrows in the earth, in a country totally destitute of trees or bushes, and is not known to dwell in forest districts.

If Buffon's figure of the corsac is to be implicitly relied upon, our burrowing fox must be considered as perfectly distinct, and anonymous; we would, therefore, propose for it the name of *velox*.

spinous processes of the back bone, and are from eighteen to twenty-four inches in length. They are taken out with a small portion of the flesh adhering to each side, and whether roasted, boiled, or stewed, are certainly very far superior to any part of the flesh of the domestic ox.

28th. We had proceeded but a few miles from our camp when it was found that Mr. Say's horse was so far exhausted as to be unable to proceed at the same pace as the other horses. Mr. Say accordingly dismounted, and by driving his horse before him, urged the animal along for a few miles; but this being found too laborious, and as several of the horses were near failing, it was determined to halt, which we did at 10 o'clock, and remained in camp during the day.

The country, for several miles to the west of the range of hills mentioned above, is as uniformly plain as that on any part of the Platte. It differs from that further to the east only in being of a coarser sand, and in an aspect of more unvaried sterility. The cactus ferox reigns sole monarch, and sole possessor, of thousands of acres of this dreary plain. It forms patches which neither a horse nor any other animal will attempt to pass over. The rabbit's foot plantation, and a few brown and withered grasses, are sparingly scattered over the intervening spaces. In depressed and moist situations, where the soil is not so entirely unproductive, the variegated spurge, (Euphorbia *variegata*,) with its painted involucrum, and parti-coloured leaves is a conspicuous and beautiful ornament. The Lepidium virginicum, distributed over every part of northern and equinoctial America, from Hudson's Bay to the summit of the Silla of Caraccas,* is here of such diminutive size that we were induced to search, though we sought in vain, for some character to distinguish it as a separate species.

At three o'clock P. M. the planet Venus was distinctly visible. Its distance from the sun at 3h. 45m. was east 36°

*See Humb. Pers. Nar. Vol. 3. page 509.

15′. There were a few broken cumulo-stratose clouds from the southwest, otherwise the sky was clear, and near the Zenith, where the star was seen, of a deep and beautiful azure. Our actual elevation, at this time, must have been considerable, and might be supposed to effect, in some degree, the transparency of our atmosphere.

Several magpies were seen about the islands in the river, where it is probable they rear their young.

On the 30th we left the encampment at our accustomed early hour, and at 8 o'clock were cheered by a distant view of the Rocky Mountains. For some time we were unable to decide whether what we saw were mountains, or banks of cumulous clouds skirting the horizon, and glittering in the reflected rays of the sun. It was only by watching the bright parts, and observing that their form and position remained unaltered, that we were able to satisfy ourselves, they were indeed mountains. They were visible from the lowest parts of the plain, and their summits were, when first discovered, several degrees above our horizon. They became visible by detaching themselves from the sky beyond, and not by emerging from beneath the sensible horizon, so that we might have seen them from a greater distance had it not been for the want of transparency in the atmosphere. Our first views of the mountains were indistinct, on account of some smokiness of the atmosphere, but from our encampment, at noon, we had a very distinct and satisfactory prospect of them. A small part only of the intervening plain was visible, the convexity of the surface intercepting the view, from the base of the mountains, and that portion of the plain adjacent to it.

Snow could be seen on every part of them which was visible above our horizon.

The thermometer immersed in the water of the river fell from 80° the temperature of the atmosphere, to 75°. Observations had been made daily to ascertain the temperature of the water of the Platte.* Notwithstanding there were only about five degrees of difference between the temperature of the air and that of the water, it was remarked by several of the party, that a sensation of extreme cold was felt on passing from the one to the other.

It is possible, that at the elevation we had now attained, the rapidity of evaporation, on account of the diminished pressure of the atmosphere, might be something greater than we had been accustomed to. For several days the sky had been clear, and in the morning we had observed an unusual degree of transparency in every part of the atmosphere. As the day advanced, and the heat of the sun began to be felt, such quantities of vapour were seen to ascend, from every part of the plain, that all objects, at a little distance, appeared magnified, and variously distorted. An undulating or tremulous motion in ascending lines was manifest over every part of the surface. Commencing soon after sunrise it continued to increase in quantity until the afternoon, when it diminished gradually, keeping an even pace with the intensity of the sun's heat. The density of the vapour was often such as to produce the perfect image of a pool of water in every valley upon which we could look down at an angle of about ten degrees. This effect was several times seen so perfect and beautiful as to deceive almost every one of our party. A herd of bisons, at the distance of a mile, seemed to be standing in a pool of water; and what appeared to us the reflected image was as distinctly seen as the animal itself. Illusions of this kind are common in the African and Asiatic deserts, as we learn from travellers, and from the language

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* The results of several observations are as follows:

	Temperature of the water.	Temperature of the air.
June 27,	68°	83°
28	70	79
29	74	82
30	75	80
July 1,	71	80

At eleven A. M.

Before sunrise the mercury fell usually as low as 60°.

of poets. They are called by the Persians *sirraub*, "water of the desert;" and in the Sanscrit language *Mriga trichna* "the desire or thirst of the antelope." Elphinstone relates,* that at Moujgur, in the kingdom of Caubul, towards evening many persons were astonished at the appearance of a long lake enclosing several little islands. Notwithstanding the well known nature of the country, which was a sandy desert, many were positive that it was a lake, and one of the surveyors took the bearings of it. "I had imagined," says he, "this phenomenon to be occasioned by a thin vapour which is spread over the ground in hot weather in India, but this appearance was entirely different, and on looking along the ground no vapour whatever could be perceived. The ground was quite level and smooth, and the weather very hot. It is only found in level, smooth, and dry places; the position of the sun, and the degree of heat, are not material, for it was afterwards seen in Damaun when the weather was not hotter than in England." On the frontier of Caubul Elphinstone saw what he calls a most magnificent mirage, which looked like an extensive lake, or a very wide river. The water seemed clear and beautiful, and the figures of two gentlemen, who rode along it, were *reflected as distinctly as in real water.* It is common in our own country, says the London Monthly Review, for ground-mists to assume the appearance of water, to make a meadow seem inundated, and to change a valley into a lake; but these mists never reflect the surrounding trees and hills. Hence the *mirage* must consist of a peculiar gas, of which the particles are combined by a stronger attraction of cohesion than the vapours of real water; the *liquor silicum* of the alchemists is described as exhibiting, in some circumstances, this glassy surface, yet as being equally evanescent.† It is afterwards suggested, in the same paper, that the gas which occasioned these extraordinary reflections may probably be the substance of the pernicious wind called Simoom. The explanation here offered will not probably be thought satisfactory. It seems to belong to the epoch of great and brilliant discoveries in pneumatic chemistry, when "a peculiar gas" was thought the agent of every phenomenon.

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* Mission to Caubul, p. 179. 4to. Lond.

† See M. Review for May 1817, p. 3.

The images of pools of water, which we saw in the deserts of the Platte, appeared to us similar to those mentioned by Elphinstone, likewise to those observed by Nieburgh in Arabia, where *inverted* images were seen.

To the more common effects of light passing through a medium charged with vapours we had become familiar. We had, for many days, seen the low bluffs of the valley of the Platte suspended over the verge of our apparent horizon, as distant capes are suspended over the sea; but in viewing these perfect images of lakes we could scarce believe they were occasioned by *refraction*, to which the phenomena of mirage have usually been attributed.* The circumstance that these pools could only be seen when we looked down at a considerable angle upon some valley; the perfect manner in which the image of the sky was returned, from the surface, and the inverted position of the objects seen, induced us to inquire whether the effect might not be produced by reflection from the lower stratum of watery vapour.† These appearances are sufficient to justify the conclusion that the quantity of evaporation is much greater here than in less elevated districts of country, where such things are not.

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* See Humb. Pers. Nar. vol. 4. p. 196. vol. 3. pp. 383. 542.

† Rays of light, falling with any degree of obliquity upon the particles of that portion of watery vapour, which lies near the surface of the earth, may be reflected, and pass off at an equal corresponding angle, so that if the eye be raised a few feet above the reflecting surface, an image of the corresponding arc of the sky is produced, as in the case of a sheet of water where the image, seen by the reflected light, is not that of the water, but the sky. Hence any object, which obstructs the rays of light in their passage from the parts of the atmosphere beyond the reflecting surface to that surface, is returned to the eye in a darkened image as from water.

Towards evening the air became more clear, and our view of the mountains was more satisfactory, though as yet we could only distinguish their grand outline, imprinted in bold indentations upon the luminous margin of the sky. We soon remarked a particular part of the range divided into three conic summits, each apparently of nearly equal altitude. This we concluded to be the point designated by Pike as the Highest Peak. Its bearing was taken a short time before we halted for the evening, and found to be south, 73° west. As we were about to encamp some of the party went in pursuit of a herd of bisons, one of which they killed, and returned to camp a little before sunset.

July 1st. Although the temperature indicated by the thermometer for several days had been about 80°, in the middle of the day, the heat, owing to the cool breezes from the mountain, had been by no means oppressive. On the night of the 30th of June the mercury fell to *55°*, and on the following morning the air was chilly, and a strong breeze was felt before sunrise, from the southeast. We left our camp at a very early hour, and travelling over a tract differing in no respect but its greater barrenness from that passed on the preceding day. We halted to dine at the distance of sixteen and an half miles. Many acres of this plain had not vegetation enough to communicate to the surface the least shade of green; a few dwarfish sunflowers and grasses, which had grown here in the early part of the summer, being now entirely withered and brown. In stagnant pools near the river we saw the common arrow head, (Saggittaria saggittifolia,) the alisma plantago, and the small lemna growing together, as in similar situations in the eastern States.

A striking feature of that part of the plain country, we were now passing, is formed by innumerable ant-heaps, rising from twelve to eighteen inches above the common level of the surface. They occur with some uniformity, at intervals of about twenty feet, and are all similar in size and dimensions. They consist so entirely of small grains of flesh-coloured feldspar, that they have all of them an uniform reddish aspect, and it is not without careful examination, that any other kind of gravel can be detected in them. The entrance to the interior of each of these little mounds, is uniformly on the eastward side, and very rarely occurs beyond the boundaries of N. E. and S. E. It is never at the top, nor on a level with the surface of the soil, but is a little elevated above it. It seems highly probable, that the active little architects, thus place the entrance of their edifice on the eastward side, in order to escape the direct influence of the cold mountain winds.

At three o'clock as we were about to resume our journey, there came on a gentle shower of rain, with wind at east, and low broken clouds. In the afternoon we passed some small ridges of sandstone crossing the river from north to south, but very inconsiderable in point of elevation and extent. We travelled this day twenty-seven miles, directly towards the base of the mountains, but they appeared almost as distant in the evening, as they had done in the morning. The bearing of the high peak above mentioned, from our encampment was south, 75° west.

The ensuing day being Sabbath, was devoted to rest. About our camp which was in the most fertile spot we could select, in a ride of several miles, there was but a very insufficient supply of grass for our horses. A species of cone flower, (Rudbeckia *columnaris*, N.) was here beginning to expand. The showy R. *purpurea*, very common on the Missouri, and the lower part of the Platte, does not extend into the desolate regions. The common purslane (Portulacca *oleracea*) is one of the most frequent plants about the base of the Rocky Mountains, particularly in places much frequented, as licks by the bisons, and other animals.

From this encampment, we had a plain but still distant view of the mountains. No inequality occurs in the surface of the subjacent country on the east of the mountains, so that our view was wholly unobstructed. They stretched from north to south, like an immense wall occupying all that portion of the horizon, lying to the northwest, west, and southwest. We could now see the surface of the plain, extending almost unvaried to the base of the first ridge, which rises by an abrupt ascent above the commencement of the snow.

A set of observations for longitude was commenced in the morning, but the weather becoming cloudy, we were prevented from completing them. In the afternoon a storm came on from the north, which continued during the night. Much rain fell, accompanied with thunder, and high but variable winds. Between twelve o'clock and sunset, the mercury in Fahrenheit's thermometer, fell nineteen degrees, from 89° to 60°.

3rd. Breakfast was despatched, and we had mounted our horses before five o'clock. We were enabled to have our breakfast thus early, as the sentinel on duty during the night, was directed to put the kettles over the fire at three o'clock, all the processes preparatory to boiling, having been finished on the preceding evening.

As we approached the mountains, wood became much more abundant along the Platte. We had often heard our guide, in speaking of the country, two or three days journey from the mountains, mention the *Grand Forest*, and were a little surprised on arriving at it, to find no more than a narrow but uninterrupted strip of timber, extending along the immediate banks of the river, never occupying the space of half a mile in width.

For several days the direction of our course in ascending the Platte, had inclined considerably to the south, varying from due west to south, 20° west.

In the course of the day, we passed the mouths of three large creeks, heading in the mountains, and entering the Platte from the northwest. One of these nearly opposite to which we encamped, is called Potera's creek, from a Frenchman of that name, who is said to have been bewildered upon it, wandering about for twenty days, almost without food. He was then found by a band of Kiawas, who frequent this part of the country, and restored to his companions, a party of hunters, at that time encamped on the Arkansa.

Throughout the day we were approaching the mountains obliquely, and from our encampment, at evening we supposed them to be about twenty miles distant. Clouds were hanging about all the higher parts of the mountains, which were sometimes observed to collect together, and descend in showers, circumscribed to a limited district. This state of the weather obstructed the clearness, but added greatly to the imposing grandeur of some of the views, which the mountain presented.

4th. We had hoped to celebrate our great national festival on the Rocky Mountains; but the day had arrived, and they were still at a distance. Being extremely impatient of any unnecessary delay, which prevented us from entering upon the examination of the mountains, we did not devote the day to rest, as had been our intention. It was not, however, forgotten to celebrate the Anniversary of our National Independence, according to our circumstances. An extra pint of maize was issued to each mess, and a small portion of whiskey distributed.

On leaving the camp in the morning, Major Long and Lieutenant Swift preceded the party, intending to select a suitable place for encampment, where they proposed to commence a set of observations, and to wait the arrival of the remainder of the party. But as they had gone forward about two miles, the point of woods at which they had left the course, was mistaken by the main body, which moved on until about eleven o'clock. By this time much anxiety was felt on account of their absence, and persons were sent out to attempt to discover them, but returned unsuccessful. A circumstance tending to increase the anxiety we felt was, that Indians were reported to have been seen in the course of the morning, by several of the party. Captain Bell was about to despatch as large a force as it was thought prudent to spare from the camp, to search for them in all the distance which had been passed since they were seen—when they arrived at the encampment of the main body, at half past one P. M.

The observations which had been made, were of course lost, as the corresponding equal altitudes for the correction of time could not be had.

In the evening the meridional altitude of Arcturus, was taken for latitude. The party remained encamped during the afternoon, when the extra allowance of corn was cooked and eaten, and the whiskey drunk in honour of the day.

Several valuable plants were here collected, and among others a large suffruticose species of Lupine. The long leaved cotton-wood* of Lewis and Clark, which is according to their suggestion, a species of populus, is here of very common occurrence. It is found intermixed with the common cotton-wood, resembling it in size and general aspect. Its leaves are long and narrow, its trunk smoother, and its branches more slender and flexile, than those of the Populus *angulata*. Some of its fruit was fortunately still remaining, affording us an opportunity to be entirely satisfied of its relation to this genus.

Here we also observed both species of the splendid and interesting Bartonia, the B. *nuda* in full flower, the *ornata* not yet expanded.

These most singular plants are interesting on several accounts, particularly the regular expansion of their large and beautiful flowers, towards the evening of several successive days. In the morning the long and slender petals, and the petal-like nectaries, which compose the flower, are found accurately closed upon each other, forming a cone of about an inch in length. In this situation they remain if the weather be clear, until about sunset, when they gradually expand. If the weather is dark and cloudy, with a humid atmosphere, they are awakened from their slumbers at an earlier hour. We have, in some instances, seen them fully expanded early in the afternoon, but this has always been in stormy or cloudy weather. In this particular, the Bartonia bears some resemblance to the great night flowering cereus, to which it is closely allied, but the gaudy petals of the cereus once unfolded, fall into a state of irrecoverable collapse, whereas the Bartonia closes and expands its flowers for many days in succession.*

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* Populus *angustifolia*, J.

A number of young magpies were seen in the bushes about the river, also the nests and young of the mocking bird, (Turdus orpheus, Vieill.)

The prairie dog villages we had observed to become more frequent and more extensive, as we approached the mountains, and we had now constant opportunities of contrasting the stupendous elevations of the Andes, with the humble mounds cast up by this interesting little animal. We observed in the numerous burrows, an appearance of greater antiquity, than in those more remote from the mountains. Many of the mounds occupy an extent of several yards in diameter, though of but inconsiderable elevation, and with the exception of the present entrance, overgrown with a scanty herbage, which always marks the area of the prairie-dog villages. Indeed we have observed several large villages, with scarce a trace of vegetation about them. The food of the marmot consisting of grasses and herbaceous plants, it is not perhaps easy to assign a reason for the preference which, in selecting the site of his habitation, he always shows for the most barren places, unless it be that he may enjoy an unobstructed view of the surrounding country, in order to be seasonably warned of the approach of wolves, or other enemies.

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* Other plants were collected about this encampment, among which we distinguished an interesting species of Ranunculus, having a flower somewhat larger than that of R. *flammula* with which it grows, often extending, however, to some distance about the margins of the pools in which it is principally found. R. amphibius; slender, floating or decumbent, leaves reniform, four or five lobed, divisions cuneate-oblong, margin crenate, petioles long and alternate. The submersed leaves are, in every respect, similar to the floating ones. Pentstemon erianthera, N., Poa *quinquefida*, Potentilla anserina, Scrophularia lanceolata, Myosotis glomerata, N.? &c., were also seen here.

Rattle snakes of a particular species* are sometimes seen in these villages. They are found between the Mississippi and the Rocky Mountains, and appear to prefer an unproductive soil, where their sluggish gait may not be retarded by the opposing obstacles of grass and weeds. Whilst exploring Boyer Creek, of the Missouri, in the Spring of 1820, our party met with six or eight of them during one day's march on the prairie, and on our subsequent journey to the Rocky Mountains we several times encountered equal or even greater numbers, in the same space of time. This is the species of serpent which travellers have observed to frequent the villages of the prairie dogs, and to which they have attributed the unnatural habit of voluntary domiciliation with that interesting animal. It is true that the tergeminus, like many other serpents, will secure a refuge from danger in any hole of the earth, rock, or fallen tree, that may present itself, regardless of the rightful occupant; but we witnessed no facts which could be received as proof that it is an acceptable inmate of the dwelling of the Arctomys.

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* Crotalus *tergeminus*, S. *Body* dusky cinereous, a triple series of deep brown spots; beneath with a double series of black spots.

Body pale cinereous brown, a triple series of fuscous spots, dorsal series consisting of about forty-two large, transversely oblong-oval spots, each widely emarginate before, and obsoletely edged with whitish; lateral series, spots transversely oval, opposite to those of the back; between the dorsal and lateral series, is a series of obsolete, fuliginous spots alternating with those of the two other series; *head* above with nine plates on the anterior part, on which are a band and about three spots, two undulated vittæ terminating in and confluent with the first spot of the neck, a black vitta passes through the eye, and terminates on the neck each side; beneath white, a double irregular series of black spots, more confused towards the tail; *tail* above with five or six fuscous fasciæ, beneath white immaculate with black points, six terminal plates bifid.

Length 2ft. 4 1-2 in.
tail 2 1-2 in.
Plates of body 151.
of tail 19.
Bifid plates at tip 6.

Another specimen, much smaller, Pl. 152, subcaudal, 20, scales at tip 3.

From the disparity in the number of plates and scales, and from the greater size of the vertebral spots in this species than in the C. miliarius, we have been induced to consider this a distinct species. Specimens are in the Philadelphia museum.

On the 5th *July* we left our camp at an early hour, and ascended the Platte about ten miles. Here the party encamped for the day, and Dr. James and Mr. Peale with two riflemen, Verplank and Bernard, went out for an excursion on foot, intending to ascend the Cannon-ball creek to the mountains which appeared to be about five miles distant.

This creek is rapid and clear, flowing over a bed paved with rounded masses of granite and gneiss. It is from a supposed resemblance of these masses to cannon balls that the creek has received its name from the French hunters. The channel is sunk from fifty to one hundred feet below the common level of the plain.

This plain consists of a bed of coarse pebbles, gravel, and sand, and its surface is thinly covered with prickly pears and a scanty growth of starved and rigid grasses. Among these, the hygrometric stipas, [*S. juncea*, *S. barbata*] are extremely troublesome, their barbed and pointed seeds adhering and penetrating like the quills of the porcupine into every part of the dress with which they come in contact. The long and rigid awn is contorted or strait in proportion to the humidity or dryness of the atmosphere, indicating the changes in this respect with the precision of the nicest hygrometer.

The detached party extended their walk about eight miles without finding the apparent distance to the base of the mountain had very considerably diminished. They had unluckily forgotten to make any provision for dinner, and now found themselves fatigued and hungry at the distance of eight miles from the encampment or the main body, and so far from the mountains that it was evidently impossible to reach them and return on the same day. They therefore determined to relinquish the attempt, and Mr. Peale was fortunate enough to kill a couple of curlews, which were roasted and eaten without loss of time.

Near the place of this halt they observed some small sandstone ridges similar to those on the Platte below, and collected among other plants, the species of currant, [Ribes *aureum**] so often mentioned by Lewis and Clark, the fruit of which formed an important article of the subsistence of their party while crossing the Rocky Mountains.

They also saw about the shelvings of the sandstone rocks, which formed for some distance the banks of the stream, innumerable nests of the cliff swallow, similar to those seen on the Missouri. In returning to the camp by a different route, they were much annoyed by the prickly pears, covering the ground so closely, that their feet were frequently wounded by the thorns, against which their mockasins presented but a very inadequate protection.

Having killed a young antelope, they re-crossed the Platte, which was here about three feet deep, clear, and rapid, and arrived at camp after sunset.

Here a complete set of observations, for latitude, longitude, &c., had been taken. Major Long and Lieutenant Swift having preceded the party in the morning, and arrived before seven o'clock, for that purpose. In the evening, observations were attempted, but without success, as the sky soon became cloudy.

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* The ripened fruit of this widely distributed shrub is variable in colour. In dry and exposed situations about the higher parts of the mountains, we have met with the berries of a deep purple, while in the low grounds, they are fulvous or nearly white. On the Cannon-ball creek we saw also the common virgin's bower. Clematis virginica, Ph. Lycopus, *europæus?* Liatris *graminifolia*, Sium *latifolium* Œnothera *biennis*, and other plants, common in the east, with the more rare Linum *Lewisii*, Ph. and Eriogonum sericeum, &c.

Robins, (Turdus migratorius.) which we had not seen since we left the Missouri, here occurred in great numbers.

On the following morning, soon after leaving the encampment, we crossed Vermillion creek, a considerable tributary from the south. In some part of its course, its valley is bounded by precipitous cliffs of a red sand-rock, whence the name of the creek.

Our guide informed us that the Indians, a few years since, destroyed every individual of a large herd of bisons, by driving them over the brink of one of these precipices.

Opposite the mouth of Vermillion creek, is a much larger stream, from the northwest, which is called Medicine-lodge creek, from an old Indian medicine lodge, which formerly stood near its mouth. A few miles further, on the same side, is Grand-camp creek, heading also in the mountains. About four years previous to the time of our visit, there had been a large encampment of Indians and hunters on this creek. On that occasion three nations of Indians, namely, the Kiawas, Arrapahoes, and Kaskaias or Bad-hearts, had been assembled together, with forty five French hunters in the employ of Mr. Choteau and Mr. Demun of St. Louis. They had assembled for the purpose of holding a trading council with a band of Shiennes. These last had been recently supplied with goods by the British traders on the Missouri, and had come to exchange them with the former for horses. The Kiawas, Arrapahoes, &c., who wander in the extensive plains of the Arkansa and Red river, have always great numbers of horses, which they rear with much less difficulty than the Shiennes, whose country is cold and barren.

The British traders annually supply the Minnetarees or *Gros ventres* of the Missouri with goods; from these they pass to the Shiennes and Crow Indians, who, in their turn, barter them with remoter tribes: in this manner the Indians who wander near the mountains receive their supplies of goods, and they give a decided and well founded preference to those which reach them by this circuitous channel, over those which they receive from any other source.

Two miles beyond Grand Camp creek, is the mouth of Grape creek, and a little above on the opposite side, that of Defile creek, a tributary to the Platte, from the south, which has its course in a narrow defile, lying along the base of the mountains.

At eleven o'clock we arrived at the boundary of that vast plain, across which we had journeyed for a distance of near one thousand miles; and encamped at the base of the mountain. The woodless plain is terminated by a range of naked and almost perpendicular rocks, visible at a distance of several miles, and resembling a vast wall, parallel to the base of the mountain. These rocks are sandstone, similar in composition and character, to that on the Cannon-ball creek. They emerge at a great angle of inclination from beneath the alluvial of the plain, and rise abruptly to an elevation of one hundred and fifty, or two hundred feet. Passing within this first range, we found a narrow valley separating it from a second ridge of sandstone, of nearly equal elevation, and apparently resting against the base of a high primitive hill beyond. At the foot of the first range, the party encamped at noon, and were soon scattered in various directions, being eager to commence the examination of that interesting region.

END OF VOL. I.